

The Principles
of
Physical Education

By
JESSE FEIRING WILLIAMS, M.D., Sc.D.
Visiting Professor of Health and Physical Education
University of North Carolina

FOURTH EDITION, RESET

PHILADELPHIA AND LONDON
W. B. SAUNDERS COMPANY

1942

Copyright, 1927, 1932 and 1938, by W B Saunders Company

Copyright, 1942, by W B Saunders Company

Copyright under the International Copyright Union

All Rights Reserved

This book is protected by copyright. No part of it
may be duplicated or reproduced in any manner
without written permission from the publisher

MADE IN U S A

PRESS OF
W B SAUNDERS COMPANY
PHILADELPHIA

To my students of Physical Education,
Teachers College, Columbia University

PREFACE TO THE FOURTH EDITION

An author should be very honest in a preface, if he would save his character, but not very modest if he would save his reputation. Of course he can be both honest and modest and pay no attention to the by-products of his behavior.

It is honest to say that this revision is the first substantial restudy of *Principles of Physical Education* which I have undertaken in several years. Other revisions were necessarily partial and limited, but a larger leisure has given time for much reading, consideration, and discussion.

It is modest to say that this revision presents considerable new material and more closely integrates the data from anatomy, physiology, psychology, and sociology in an interpretation of the foundations upon which the principles of physical education must rest. Moreover, the issues of these days have brought the full impact of modern political philosophies upon principles of physical education and these have been appraised in a more complete description of foreign programs, especially in Germany, Italy, and Russia. And in our own nation, Federal Governmental expenditures and activities, in areas affecting physical education, have also demanded consideration.

This revision has attempted to make clear that physical education is really very simple. And it is the simple things in life which gladden the heart of man. Tasting food when hungry, feeling warmth when cold, sleeping when tired, the splashing of cold water on a warm face—these simple experiences make all men glad everywhere. Physical education also makes men glad. It is running and jumping, sometimes gaily as in dance, excitedly like beaten cymbals as in the play of children, or determinedly as in sports. Unless overly organized for other than its own ends, it never is complex, but always as simple as sleep, work, taking the hand of a friend, or listening to music.

The world little cares about the supports and buttresses of any art. Respecting physical education, it wishes merely to know can you run and jump, and, because this is so universal a gift, how

well can you do these things If the matter ended there, books about the subject would be indeed superfluous and revisions would not be necessary Other factors, however, intervene A multitude of other demands arise There is conflict between the forces of a commercial and industrial civilization and the biological needs of growing, developing, human organisms Everywhere there is sharp and at times acrimonious debate between the literary and classical and the biological and acutely functional, between the proud inheritors of an ancient and honorable past which knew the palestra and the birthright of strength, skill, endurance, and agility in every man

The divisive influences in education are partly traditional and partly the necessity for maintenance of the area in which one has been trained and now works Both the academician and the functionalist in education need to be reminded of the essential unity of man There can be no exclusive emphasis upon the physical without producing an imbalance as disturbing to unity as an exclusive emphasis upon the mental Therefore this revision has reaffirmed the concept of unity The whole man, as seen by physiology, psychology, and philosophy is the end of all educational purpose

It has been necessary also to consider the large problem of physical education in relation to the war emergency without forgetting its basic service in normal social life In this book, the varied aspects of fitness are not interpreted narrowly since fitness is always a condition for good living at all times—in war as well as in peace

In the broad political, economic, and social revolution of these vivid days, the times demand that all social efforts state their purposes and define their positions This revision has attempted to be explicit in this matter It seems clear that physical education should stand firmly across the highway of today's confused purposes, not beckoning from the side of the road for a ride, but seeking to direct the endless stream of human traffic to quiet roads through the cool woods by clear streams, leading home to simple pleasures, to sound sleep, and to renewed energy and life.

Readers familiar with other editions of this book will note that there is included considerable new statistical information, new tables, and new references Many will be pleased with the ques-

tions at the end of each chapter and the improved summaries. Old friends of the book will doubtless notice how changed it is and yet how like the old *Principles* do not change but their applications and the related discussions may be transformed by events or increased understanding. It is gratifying to the author that it has not been necessary to alter the underlying philosophy of this work. Nothing has happened in the dire extremity of these days to obscure the salient fact that we engage in motor activities because of what we are and that the pursuit of them yields the treasures of vitality which we never seek but inevitably find.

It is always amazing that some persons cannot visualize strength unless one works for it directly; these would never be able to understand the blacksmith and his arm.

JESSE FEIRING WILLIAMS

University of North Carolina,
Chapel Hill,
September, 1942

CONTENTS

CHAPTER I

THE SOURCES AND DATA OF PRINCIPLES OF PHYSICAL EDUCATION

PAGE

3

Orientation of Physical Education, 3—The Profession of Physical Education, 5—What Are Principles? 6—Principles Based on Facts, 7—Principles and the Profession, 8—The Validity of Principles, 9—Examples of Faulty Beliefs, 9—"Schools" or "Systems" and Principles, 10—The Social Direction of Physical Education, 11—The Principle of Relative Values, 12—Static and Dynamic Views of Man, 13—The Ever Present Risk, 14—The Application of Principles, 15—Summary, 16—Questions, 17—Reference Readings, 18

CHAPTER II

THE HAZARDS AND SHORTAGES OF MODERN INDUSTRIAL LIFE

21

The Problem Examined, 21—Primitive Life, 21—Modern Industrial Life in the United States, 23—Degeneration in Civilized Society, 24—Evidences of Our Biological Weakness, 26—The Selective Service Acts and Their Revelations, 26—Defects and Deformities in School Children, 29—Preservation of the Unfit, 31—Defects in University and College Students, 32—Loss in Racial Endurance Particularly in Woman in Child-bearing, 37—The Question of Longevity, 39—The Increase in Insanity and Cancer, 40—Defects in Urban and Rural Groups, 40—The Presence of Disease in Adults, 44—How Physical Education Views the Problem, 44—The Whole Man and the Whole Problem, 45—Summary, 48—Questions, 49—Reference Readings, 50

CHAPTER III

THE NATURE OF MAN—HIS BIOLOGICAL FOUNDATIONS

53

Nature and Nurture, 53—The Permanence of the Physical Basis, 56—The Biological Basis of Life, 57—The Biped Position, 60—Racial Physical Activities Analyzed, 62—Further Facts in Development, 65—Growth and Development, 69—Factors Influencing Growth, 69—Chronological, Anatomical, and Physiological Age, 70—Physique, 71—The Role of Anatomy and Physiology in Physical Education, 72—The Heart and Circulation, 73—Norms for Amplitude and Voluntary Movement, 75—Respiration, 75—Reciprocal Innervation, 78—Fundamental to Accessory, 79—Developmental Hazards, 80—Summary, 83—Questions, 85—Reference Readings, 86

CHAPTER IV

PAGE

THE NATURE OF MAN—HIS PSYCHOLOGICAL FOUNDATIONS

91

The Unity and Diversity of Man, 91—Psychology and Instincts, 92—Physical Education and Modern Psychology, 95—Habits, 96—The Learning Process, 98—Practical Suggestions from Psychology, 103—Summary, 111—Questions, 112—Reference Readings, 113

CHAPTER V

THE NATURE OF MAN—HIS SOCIOLOGICAL FOUNDATIONS

117

Original Nature and Custom, 117—Human Behavior, the Interaction Principle, 118—The Social Learnings of Man, 118—Human Behavior and Calamities, 119—Aspects of Contemporary American Culture, 121—Neglect of Body, 121—Work, Wealth, and Morals, 128—Democracy and Government, 134—Laissez Faire and Intercollegiate Sport, 140—Competition and Cooperation, 140—The Combined Biological and Social Inheritance, 147—Social Forces Develop Different Traits and Idens, 149—Social Inheritance in Physical Education, 151—Summary, 154—Questions, 156—Reference Readings, 157

CHAPTER VI

THE HISTORIC RÔLE OF PHYSICAL EDUCATION IN THE PROBLEM OF ADJUSTMENT TO LIFE

161

The Influence of the Experience of Others, 161—The Reliability of the Experience of Others, 162—Evaluation of the Experience in Terms of Results, 164—Experience in Terms of Traits and Customs, 165—German Physical Education, 167—Swedish Physical Education, 172—French Physical Education, 173—Italian Physical Education, 176—English Physical Education, 177—Russian Physical Education, 179—American Physical Education, 180—Summary, 185—Questions, 186—Reference Readings, 187

CHAPTER VII

AN ANALYSIS OF THE BASIC PROBLEMS SHAPING PHYSICAL EDUCATION IN THE UNITED STATES

1

The Problem Examined, 191—Economic Forces and Physical Education, 193—An Interpretation of the Economic Standards, 202—Social Forces and Physical Education, 208—Physical Education and Social Delinquency, 208—Social Forces Antagonistic to Physical Education, 213—Political Influences and Physical Education, 218—Summary, 223—Questions, 225—Reference Readings, 227

CHAPTER VIII

PAGE

A PROGRAM OF PHYSICAL EDUCATION FOR MODERN AMERICA 231

A Blindness in Intellectuals, 231—Outline of a Program of Physical Education, 231—Individual Gymnastics, 232—Games, Sports, Athletics, Play, Equestrian, Aquatics, 234—Dance, 235—Self-testing Combat and Self-defense Activities, 236—Fundamental Skills, 236—Out-of-door Activities of the Camp, 238—What Part Has Gymnastics in this Program? 238—The Place of Drill, 239—When Is a Person Physically Educated? 240—Summary, 241—Questions, 242—Reference Readings, 242

CHAPTER IX

AIM OF PHYSICAL EDUCATION 247

General Considerations in Formulating an Aim of Physical Education, 247—Aim and Its Relationships, 248—An Aim of Physical Education, 250—The Fallacy of the Back-to-the-Body Aim, 253—Summary, 256—Questions, 256—Reference Readings, 257

CHAPTER X

OBJECTIVES IN PHYSICAL EDUCATION 261

General Considerations, 261—Objectives of Individual Gymnastics, 262—Objectives in Games, Athletics, Sports, Aquatics, and Equestrian, 263—Objectives of Dance, 264—Objectives in Hiking, Camping, Fishing, and Hunting, 268—Objectives in Self-testing Activities Stunts on Apparatus and Personal Combat Activities, 268—Objectives in Fundamental Skills, 269—Summary, 275—Questions, 276—Reference Readings, 277

CHAPTER XI

OBJECTIVES IN EQUIPMENT AND STAFF 281

Relation of Facilities and Staff to Principles and Program, 281—Changed Conditions Modifying Equipment, 281—Area of the School Site, 282—Considerations Determining Standards, 283—Area of School Site for High School, 285—Buildings and Fields in the Physical Education Plant, 289—Equipment for the Elementary School, 289—Equipment for the High School, 290—Dressing Facilities, 293—Indoor Gymnasium for Colleges, 295—Outdoor Facilities, 296—Changed Conditions Modifying Staff, 299—The Staff in Physical Education, 299—The Educational Function of Specialists, 300—The Director or Professor of Physical Education, 303—Professional Training, 305—Professional Ethics, 306—Summary, 308—Questions, 309—Reference Readings, 310

CHAPTER XII

PAGE

PRINCIPLES OF METHOD

315

Scientific Method, 315—Methods and Objectives, 316—The Range of Objectives, 317—Many Methods and One Is Best, 319—Method in Technical Learnings, 320—Method in Associated Learnings, 323—Method in Concomitant Learnings, 332—Summary, 338—Questions, 340—Reference Readings, 341

CHAPTER XIII

TESTS AND MEASUREMENTS OF PHYSICAL EDUCATION

345

A Changing View of Measurement, 345—The Function of Tests, 346—The Backgrounds of the Testing Movement, 346—The Statistical and the Clinical Approach, 348—Common Errors in Measurement, 349—Principles of Measurement, 351—The Measurement of Fitness, 353—Measurement of Functions, 354—Classification for Physical Activity, 354—Summary, 355—Questions, 356—Reference Readings, 357

CHAPTER XIV

STANDARDS FOR JUDGING PHYSICAL EDUCATION PRACTICE

361

Standards by Which We Judge, 361—Evaluation of the Standards, 370—Questions, 374—Reference Readings, 374

INDEX

375

THE SOURCES AND DATA OF PRINCIPLES OF PHYSICAL EDUCATION

"I do not endeavor either by triumphs of confutation, or pleadings of antiquity, or assumption of authority, or even by the veil of obscurity, to invest these inventions of mine with any majesty. . . I have not sought nor do I seek either to force or ensnare men's judgments, but I lead them to things themselves and the concordances of things, that they may see for themselves what they have, what they can dispute, what they can add and contribute to the common stock"—Bacon

Principles of Physical Education

CHAPTER I

The Sources and Data of Principles of Physical Education

Orientation of Physical Education.—The first physical educator was the parent who taught his son how to throw, to jump, and to climb, or in company with others instructed him in the standards of the group to which he belonged. The initiations of youth as a part of the introduction to responsible manhood and womanhood, and social standards, or standard ways of behavior, have always been taught by the elders to the young. Through these two lines of effort flow the source and purpose of physical education—to train the intelligence, to develop the organic systems, to master certain fundamental skills inherent in the individual's nature under the force of the social requirements, and to shape the young to understand, interpret, and uphold the standards of conduct approved by the group.

Little is known of such physical education in these earliest days. There are no chronicles to tell us the complete story. Scattered bits of information are revealed by the explorations of geologists and anthropologists; the life-activities of primitive peoples today help to portray the picture of this early education, but it is all partial, limited, and in outline only.

The plain truth of the matter is that until the Greeks made their contribution to the world little is known of educational beginnings. We go back to the Greeks to explain many things, and particularly to understand the relationship between physical education on the skill side and the education of the citizen. We do not stop there, however. The remarkable conception of Greek thinkers that related gymnastics and music for the development

of the individual, the altogether different notion in Rome that viewed physical training as an agency for military purposes, and then later, the withering hand of asceticism laid upon the physical body of man, all represent variations of the same effort that surged through primitive man driving him to train the young to meet social needs. When the philosophy of the day was harmony and beauty, when civil power through military conquest was the *summum bonum*, when the goal of man's effort was to reach God, and when the vagaries of St. Augustine's early days pointed out the handicaps to spiritual excellence, physical education was twisted or turned this way or that to serve the needs of the groups concerned. Even Vittorino da Feltre, at Mantua, in 1423, incorporated in his school "La Casa Giocosa," the ideas of the group of noblemen that influenced his thought and acts.

It is not surprising, therefore, to find in the modern world a great variety of forms of physical education. Many programs have been proposed, numerous plans offered. There are today at least seven well-known national systems of gymnastics, innumerable varieties of dance and games, and plays of all kinds. In addition to these more or less regular forms of physical education there are curious types of massage or treatment cures, special breathing methods, exercises to cure eye defects and various forms of bodily malfunction.

Here then are influences which have operated for thousands of years in one direction or another! The application of physical education to human needs has been varied indeed. The meritorious has been challenged by the worthless, the scientific by the fraudulent. In schools, in universities, in industry, in numerous organizations engaged in welfare work, on playgrounds, in clinics, in hospitals, in military forces of most nations, physical education has won a place of respect and excellence. On the fringe, however, is the constant challenge by the exploiters of this interest. Physical culture is advertised in "courses" to be taken, in various cures to be effected, in numerous proposals for "Health, Strength, and Beauty." Commercialized by faddists, physical education has acquired in some quarters a meaning which is not enviable. The true and the false are clouded frequently by the same nomenclature. It is the simple truth of the matter, however, that the only connection is one of terminology. Physical education today is scientific

and socially minded, physical culture¹ today is cultism, culpable and commercialized

The Profession of Physical Education.—The professions which deal with the application of facts to human problems have come up through mystery, fraud, and chicanery. The earliest priests claimed a relationship with God that gave them unusual opportunity to foretell happenings, to drive away evil spirits, and appease the Great Father. Medicine has had its barber surgeons, alchemists, "old women," and medicine men. The secrets of the craft, frequently held in a family, became a hereditary possession and were guarded zealously. With the discoveries of science a new order of events issues forth. Special mystical powers give way to truth and fact. For example, with the growth of science, medicine changed from pure speculation, empirical judgments, fanciful theories, and mystical powers to objective determination of conditions and unceasing search for truth.

Aside from a few outstanding exceptions, physical education in America in earlier days was sponsored by a motley group of circus performers, wrestlers, boxers, strong men, and a sporting clique that spoke for a kind of activity in which they specialized because there were no others articulate. Even today this influence is felt and a fringe of irregular, untramed performers prey upon the public, advise concerning health matters, and speak with assurance about even the most uncertain and debatable subjects.

But physical education, a part of education, and a representative of the teaching profession, has in common with modern education general fundamental principles. It is the possession of such that distinguishes a profession. Fundamental principles are based upon scientific facts. In addition to such a basis, the teaching profession is dedicated to the service of mankind, and hence its principles reflect its understanding of human social needs.

Every profession derives its principles from scientific facts or it is not a profession. Medicine rests upon the biological sciences, anatomy, physiology, bacteriology, pathology, pharmacology, and

¹ The term "physical culture," used in the United States since the middle part of the nineteenth century, was for many years highly accepted in universities because it paralleled the "cultural" period. "Esthetics" and other cultural terms were commonly used then. (See Elliott, R. *The Organization of Professional Training in Physical Education in State Universities*. Doctor's Dissertation, Teachers College, Columbia University, 1927.)

derives its procedures from the facts that these sciences reveal. Physical education, as one aspect of education, rests upon the facts of man's nature, as shown by genetics, psychology, anatomy, physiology, kinesiology, and sociology, and from these foundation sciences it derives fundamental principles. These principles must reflect also the social purposes of all educational effort whenever physical education operates in any of the institutions of society which reflect, interpret, or aid in forming social forces.

The untrained individuals who conduct physical education as commercial ventures may give some attention to the scientific data available today, but in general their purpose is exploitation of the public rather than service to the public. In this exploitation they fall back upon the methods of an earlier day and seek their victims by appealing to mystery and secret methods. It is not unusual to find this group advertising special systems of breathing, the culture of vitality, the secrets of beauty, the restoration of "manhood," and even the promise of longevity. Magazines with marked sex appeal advocate going barefoot, vegetarianism, and drinking milk for the cure of syphilis.

Untrained persons, even though high-minded and patriotic, commit colossal blunders in their effort to speak a language they do not understand. For example, an officer in charge of physical training in the navy reported² that he had "invented" a "new system" of physical training based upon "the principle of corrective suction" by means of which he could "create a new hinge in the back."

These influences are no more a legitimate part of modern physical education than the exploiters of cancer cures, kidney remedies, and other nostrums are a representative part of scientific medicine. Physical education is a profession, guided by principles, based upon scientific facts and prevailing social needs, and stands, not as a specialist without, but as a member of the staff of education at work within the school, the playground, and the university.

What Are Principles?—The term "principles" is not restricted in usage to educated persons. One may have very little education and yet remark in consideration of some matter, "It's against my principles." This may be a judgment derived from facts, but it is

² New York Herald-Tribune, July 16, 1941

more apt to be one of the superstitions or taboos of the individual Robinson³ says in this connection

“The Modern Principle’ is too often only a new form of the ancient taboo, rather than an enlightened rule of conduct. The person who justifies himself by saying that he holds certain beliefs, or acts in a certain manner ‘on principle,’ and yet refuses to examine the basis and expediency of his principle, introduces into his thinking and conduct an irrational, mystical element similar to that which characterized savage prohibitions. Principles unintelligently urged make a great deal of trouble in the free consideration of social readjustment, for they are frequently as recalcitrant and obscurantist as the primitive taboo, and are really scarcely more than an excuse for refusing to reconsider one’s convictions and conduct.”

Principles which are nothing more than taboos, trained into one by the environment, are clearly not the product of scientific facts. Such a guide as this savage-mind type cannot serve the needs of modern man.

Principles Based on Facts.—Darwin in his study of animal life learned many related facts. From these facts he derived the principle of natural selection. In similar fashion the principle of democratic representation is the outgrowth of the experiences of men with various types of political organization and is derived therefore from a body of facts regarding government. At times, principles are established so clearly that they seem irrefutable and come in time to have the sanction of natural law, as the law of gravitation. At other times, there may be lacking all the facts that are desired and yet the validity of those available is so high that they serve as the basis, at least tentatively, of principles.

Principles then are fundamental beliefs based upon facts. They are used as guides in forming judgments and determining action. Thus, the principle that distinguishes in physical education between certain stunts on apparatus for boys and similar activities for girls is based upon the facts of anatomy and physiology, which point to a need for different activities for the two sexes at certain age levels. The principle that breathing should follow as a result of activity, and be an expression of physiological need rather than

³ Robinson, J. H. *The Mind in the Making*, Harper & Brothers, New York, 1921, p. 91.

reflect methodology, rests upon certain established facts of physiology, pathology, and psychology. The principle that dance should be an objective, expressive activity rather than a subjective, self-conscious movement, resides in the nature of dance, in the immemorial pageantry of the race, as well as in the psychological backgrounds of the act.

Principles and the Profession.—One difference between a profession and a trade is that the former is guided by principles based upon scientific facts, while a trade is guided only by rules, methods, and directions. These rules may be based upon scientific fact, but the artisan need have no knowledge of them. The characteristic of a profession is its reliance upon facts of nature as the basis for determination of procedure.

One of the weaknesses of physical education, and indeed of all education, is shown in the training given to teachers in which method is emphasized greatly. The school of physical education that trains teachers in the *how* without an adequate education in the *why* and the *what* is fostering a trade rather than a profession. A teacher of physical education who teaches certain exercises or conducts certain procedures in utter ignorance of the facts and principles underlying his teaching is promoting a trade, not a profession.

The record of a recent observation will illustrate the difficulty. During a demonstration of a simple type of gymnastic exercises, numerous teachers in attendance were noticed to be engaged in copying the exercises. If their education had been adequate, such use of dead material would have been unnecessary. Summer session students frequently clamor for written material that they can take with them for use in their classes. They wish "material" which requires no adaptation. Given methods and materials they can teach after a fashion, many of them do not know what it means, what it is all about. Such persons are not educated; they have methods only. Their *teaching* is automatic, they can go through the motions.

This condition is due to the kind of training given to these teachers. They lack principles and facts; they have only methods. Hence the need felt for "new material." On the contrary, the professions of medicine, engineering, and architecture function in a radically different manner.

The outstanding need in physical education is adequate professional training, education in principles, values and meaning. The teacher who understands a stadium only in terms of the number of bags of cement, the nails, steel, and gravel used in its construction is not prepared to lead in the kind of education in that stadium which a university can approve openly or which the nation can endorse with confidence.

The Validity of Principles—An opinion or belief that exercises a directing influence on selection of subject matter or procedure in teaching may have the force of a principle, but it may not be valid in its operation. It may be nothing more than a superstition, a taboo; it may have back of it a body of misinformation. This information may vary tremendously in its validity, both with respect to the accuracy of the data and also with reference to the point of view maintained in deriving the principle.

It is a significant thing that one may uphold a belief based upon untruth as steadfastly as if it were resting on secure foundations in fact.

Nevertheless, it is important to remember that the word "principle" implies truth. One meaning of the word connotes primary substance, cause, fundamental truth. It is in this spirit that the words "eternal principles" are used. While it is recognized that beliefs based upon taboo, inaccurate information and traditional practices may have the force of principles in directing effort, use of the term *principle* to imply a foundation in scientific fact is highly desirable and is adopted in the discussion of this book.

Examples of Faulty Beliefs—The common source of fallacious beliefs is faulty tradition. These arise out of inaccurate data, imperfect reasoning or pure superstition, and become canalized in the habits and practices of generations. Physical education, together with all organized bodies of practice which have not freed themselves from tradition, suffers greatly from such faults.

Among the traditional beliefs of physical education there are numerous instances of erroneous conclusions. There are the ideas that health is largely a physical matter dependent upon intestinal peristalsis, hepatic circulation, and respiratory function, that the most valuable result of physical education is discipline, believed to accrue to one made to do things which have no inherent interest, that the body should be exercised in symmetrical fashion and all

movements should be made bilaterally, that maximum development of all the muscles of the body should be attained, that an exercise is educational if one learns it regardless of its utility or relationship to life's experiences, that health and strength can be built up quantitatively during school days and can be drawn on in later life, that large lungs and a big chest are desirable, that good posture is a matter of muscular strength on the one hand, and a desire to stand erect on the other, that a straight spine without curves gives a strong back, that responding to the command of a teacher makes for desirable character in a citizen of a democracy, that a number of character qualities, general in nature, such as accuracy, obedience, perseverance, and courage can be developed by special types of exercises, that a high degree of joint mobility should be attained, that the fingers should have certain prescribed positions in expressive movements; that exercise is healthful regardless of the sanitary conditions of the gymnasium, that children do not require instruction in play, that physical education is exercise and nothing more than that; that fitness is physical, and numerous others

"Schools" or "Systems" and Principles.—Principles are essential for physical education, but it is vital that they be founded on facts as far as facts are available. Traditional beliefs will not suffice whenever there are facts to support a new opinion or to correct an old one. The need for fundamental principles confronting the profession is indicated by the existence of various "schools" and "systems" of physical education. How great is that need is shown by the fact that one school for training teachers of physical education expounds Swedish theory, another is an exponent of Danish beliefs, another reflects German objectives, and another Dalcroze, or Delsarte, or Greek dance. This embalming of principles in national cultures is nowhere as marked as in private and semiprivate institutions. The outcome of such practice is confusion, waste, and misunderstanding.

Physical education needs principles which rest not upon a special brand of truth, nor upon a special edition of facts. There is no such thing as Swedish Truth, or Danish Truth, or French Truth, or American Truth. There is truth, a scientifically determined fact. Failure to recognize the meaning of this in training students of physical education abandons the student to the fal-

lacies of special interests. Such a catastrophe leaves him unprepared to organize and interpret physical education in relation to the social scene of his time and place. Most of the criticisms of physical education directed at its professional service are to be examined in the light of these proposals of "schools" and "systems."

The service of principles in a situation of this kind is particularly great if those who represent different views will submit their opinion to its test. Suppose A, wishing to gain good posture, joint flexibility, and muscular strength for children as soon as possible, would advise a certain type of systematic gymnastics. B, considering other things more important in the developing period of childhood, is opposed to such a systematic and artificial activity. Continual emphasis upon individual views avails nothing and may even lead to derogatory remarks and senseless criticism. Suppose on the contrary that B refers the whole question to the principles of the child's nature, his native drives and urges, the need for education in practices which will not only give muscular strength and agility, but also will shape attitudes and foster skills in activities for living. Suppose, in addition, that B refers to the tendencies in physical education today and shows that books and programs recommend the view which he is proposing.

This reference of disputed practices to principles may lead to agreement on the validity of the principles and so settle the question or, if disagreement persists, the controversy is now on a different level and is apt to be free from recrimination, distrust, and personal criticism. The questions of ballet dancing for children, football for girls, interschool athletics for elementary school children, and numerous others should be considered in similar fashion.

The Social Direction of Physical Education.—The sciences of anatomy, biology, physiology, embryology, and anthropology provide a body of significant facts for determination of principles in physical education. The technical procedures in lessons, the standards for participation, the use of certain materials rest upon such data. For example, anatomy provides information regarding the use of the foot in walking, biology traces an instructive lesson in the developmental stages of vital organs, physiology presents the facts of respiratory need, psychology reveals the laws of learning,

embryology makes clear the meanings of growth and of development, anthropology offers an explanation for movements of climbing and hanging. Reliance upon these sciences insures correct principles in the technical aspects of physical education.

Moreover, there are other things to be considered. Games, play, dance, sport and gymnastics are not conducted alone for the physical development they give. The unity of mind and body precludes any such narrow and fallacious view. Human relationship, social values, moral standards are intimately bound up and associated with all the activities of physical education. This aspect of education, in which the word physical denotes the *means* rather than the *end*, is conducted with reference to all the legitimate social aims of education in general.

Nevertheless, it is true that a program of physical education may be based upon sound principles as far as the technical aspects of the activities are concerned and be wholly fallacious with respect to the social needs of the individuals involved. It is precisely this defect that is apparent in "systems" of physical education imported into the United States. Regardless of the technical principles, such programs are apt to be lacking in adequate standards in the field of social development because of the widely varying social customs of different peoples, and the relation that these views bear to forms of government. While principles relating to man's nature are relatively permanent, and, if based on scientific fact, are adaptable to any people anywhere on biological grounds, the tremendous differences in social, political, and at times environmental status are so great, that imported systems are usually worthless.

The Principle of Relative Values.—Regardless of the value we place upon any technical exercise or motor skill, physiological result or social value, we will always be confronted by the principle of relative value with respect to the opportunity available and the greatness of the need. Physical education alert to fundamental principles will be ready always to formulate its program in realistic fashion.

The changing world today demands vigorous youth. The motor car and the aeroplane now dominate national life. Their effective use demands fine coordination between hands, feet, and eyes, accuracy in judgment of speed and distance, physical courage and

readiness in response Our changing world also presents problems in the use of leisure, in the prevention of delinquency, in the development of satisfactions and emotional sanity. Failure to recognize the changing world in which we live condemns all human effort to dead purposes and nonexistent needs To propose for American schools programs devised for children of another land living under tremendously different conditions is to ignore the lessons of history To conduct physical education in the United States today without reference to the persistent problems of our social scene or regardless of the biological shortages revealed in modern life is to miss completely its real function

Principles of physical education must be set up which reflect the facts of our changing world in the mirror of that future world that we, in our best moments, most desire The problems of urban congestion, transportation, and leisure time, and the general disregard for law in comparison with problems of how to throw farther, to dance longer, or to stretch more, are on quite a different level of importance The former deserve immediate attention and devoted study, concentration on alignments, stretchings, toe pointings, and methods of lengthening the punt are of less value Nevertheless, the scientific technical facts that enrich, perfect, and justify the practice of physical education in its varied forms are not to be neglected They are important There is need for more precise information on a great many vexing problems of procedure Evaluation of these guides as of less importance than the ones that reflect the changing social and political problems in modern society does not render them worthless They are significant, but here as elsewhere in education the purpose is more important than the tool The social direction of human effort is to be considered as paramount

Static and Dynamic Views of Man—It is not uncommon to see practices and to hear explanations that reflect, quite unknowingly, a static view of human nature Posture is discussed as if the problem of posture were merely a matter of vertebrae, muscles, and ligaments This static conception of man does not even understand the physical and chemical explanation of conduct It has never understood the meaning of the prolonged period of infancy, and the terms growth and development have been mystical always

On the contrary, a man's nature is revealed by the efforts to satisfy inner urges to activity and his behavior reflects, therefore,

these inner drives. It is these wants, bound up in the complex organization of his nervous system, that constitute the basis for motive, attitude, and inclination.

By nature, then, he is not an individual of putty to be molded by environmental forces. Under the lash of authority or through early doctrination, he may be shaped by training into an obedient soldier of the wooden Indian type, but to secure such response all the pressure of a totalitarian society must be brought into play. When the modern totalitarian state begins to mold the individual to purposes of the state it uses all possible means to arouse the emotions, native urges, and drives to action. Docile, obedient individuals can be produced either through fear or established social custom based on fear. In Germany and Italy the concentration camp, assassination, and purges were employed but they went beyond these fearsome ends. They used the promises of national greatness, riches, and a fairer future based on the claims of rights, the ruling race, and similar emotional appeals.

A democracy has no need for docility and subservience in its citizens. It does not set out to *mold* any individual. Rather it attempts to be sensitive to the wants of the person, the common emotions of daily life, and the urges of the personality for expression and self-realization.

This contrast in totalitarian and democratic philosophy is quite properly a parallel to the static and dynamic views of human nature. When the individual is merely an item in the national account to be employed for national ends, his abilities are cataloged and he is assigned to predetermined ends. When, however, the individual is a personality to be developed, a personality as yet unknown whose future is still to be discovered, then the dynamic character of all experience takes on added significance in his education. Thus, physical education can drill a group of boys for regimented purposes, or it can expose them to a variety of responses in games, sports, and vigorous activities always seeking to discover their best reactions, to strengthen their best habits, to fortify their best emotions and attitudes.

Thus is the issue joined.

The Ever-Present Risk—There is always the hazard that the dynamic view of physical education will be misunderstood. To behold human nature as a reality to be comprehended and edu-

cated, and the environment as something to be shaped to serve the needs of man is to court criticism from those who are intent upon the facts either of the environment alone or of the individual alone.

The environment may be impoverished and opportunities for development of the individual may be so lacking that the usual human product is weak, malnourished, undersized, with no skills and no interests in recreation, unable to use finely the little leisure he has. In some communities the shortages in facilities are very real. The practical person who sees in such limitations the sole factors for the determination of programs looks with disdain, if not contempt, upon one who is concerned with the kind of activities which all young persons ought to experience. There are programs which reflect exactly the limitations of the place. Of course, one cannot make a silk purse out of a sow's ear, but this proverbial wisdom too often endows an attitude which is quite unable to seek for more suitable materials.

The problem of education everywhere is to discover the kinds of experience which young persons need in order to develop the traits, interests, skills, and qualities which their society desires and then to attempt, by every possible means, to establish opportunities for these to develop. There is no other way for those who see life as progress and improvement—a dynamism which continually evolves new and better forms as it realizes the possibilities inherent in man. The need that people have for vigor, for a continuing activity leading to wholesome use of leisure, for motor skills serviceable today, for ideals consonant with a democratic concept of society is very great. Such need arises out of our social scene, it is true to man's inherent urges, and comprises therefore an imperative command for those who understand. The tragedy of human life is ever, "too little and too late." Too few playgrounds, too little equipment, too few teachers, too little time! These are the ceaseless complaints which well up from schools and communities where the child is drilled in stupid calisthenics because there is no opportunity to do anything else.

The Application of Principles.—If one is convinced that a principle is true, that a body of facts is sound, that a certain program is required by the considerations of theory, then one is obligated to put into operation, as far as possible, the practice which will

illustrate the theory. There are those who will say, "The theory is good, the principles are acceptable as theory, but they will not work, they are not practical." This attitude is precisely like one which would accept honesty as good theory, but would note that it was not practical in the modern world.

Many of the desirable things to be done in physical education do not have wide general approval. There are newspapers which continue to call physical education a "foll", there are educators who do not understand play, and there are citizens who believe that the sole function of the school is to train the mind. These often oppose a rich program of physical education but will tolerate a drill program with its gross absurdities and impoverished outcomes. The duty of physical education is clear. Whatever programs are best for the finest development of youth, whatever facilities are necessary, the leadership of physical education is everywhere obligated to realize them.

Leaders in physical education who accept the theory or principles at any point are bound to give practical expression to that intellectual acquiescence or completely stultify themselves. Moreover, one who proposes the theory, or states the principles, or assembles the facts is no more responsible for demonstrating their practical application than he who accepts them. The test of leadership is precisely here—to help others to see what is so clear to you. The only way to lead in physical education is to lead. To make prevail that which appears impractical, but which we are convinced is true, is at once the challenge and the test of our conviction and our leadership.

Summary.—In consideration of the sources and data of principles, the following appear to be significant:

1. The lay public has an erroneous idea of the nature and purpose of physical education due to the character of experience in the last generation and the exploitation of the field by unscientific and commercialized groups.

2. Principles of physical education are based on scientific facts and are expressive of educational ideals.

3. The outstanding need in physical education today is not only more teachers but also better educated ones.

4. The differences of opinion among leaders regarding the procedure and program of physical education should never be held

on personal grounds, but rather fought out in the light of scientific fact, educational principles, and the spirit of sportsmanship

5 The changing modern world presents problems for physical education which constitute the background out of which the new program must evolve

6 Physical education must appraise the concepts of totalitarian states to discover for its area of education the principles which should guide its decisions

7 Our needs arise out of our social scene and out of our nature

8 We are obligated to realize in action what we really believe

QUESTIONS

1 What did the earliest physical educator try to do for his children?

2 How did Greek and Roman physical education differ?

3 How does a philosophy affect man's view of physical education?

4 What constitutes a profession?

5 What illustrations from recent years can you give which indicate that the Federal Government does not recognize professional status in physical education? Is this a new or an old problem?

6 To what extent, in your judgment is physical education a profession? Is teaching a profession? What are your standards?

7 What are principles? To what extent, in your judgment, do principles of physical education operate in programs?

8 Give ten examples of faulty beliefs and cite the scientific evidence which proves each belief faulty and therefore not a principle. Do you need more evidence? Where can you get it?

9 What is a "system" of physical education? Why do foreign systems fail to meet our needs?

10 When a disputed point is tested by principles, what advantage is gained?

11 Are the biological and the social directions of physical education inherently in conflict?

12 Why is the principle of relative values important in selecting activities?

13. How do static and dynamic views of man serve to orient the student of physical education? Give examples

14 Why does the dynamic view often lead to criticism? Why does it enrich our purposes?

REFERENCE READINGS

- 1 Briggs, T. H. Secondary Education The Macmillan Co., New York, 1933
- 2 Bruce, W. Principles of Democratic Education Prentice-Hall, Inc., New York, 1939
- 3 Educational Policies Commission The Purposes of Education in the American Democracy National Education Association, Washington, 1938
The Unique Function of Education in American Democracy, 1937 The Structure and Administration of Education in American Democracy, 1938
- 4 Lindeman, E. C. The Goal of American Education Chapter 1 of Democracy's Challenge to Education Farrar and Rinehart, Inc., New York, 1940
- 5 Saucier, W. A. Introduction to Modern Views of Education Ginn and Co., Boston, 1937

THE HAZARDS AND SHORTAGES OF MODERN INDUSTRIAL LIFE

"Will the human qualities which have carried our civilization upward to its present point of complexity—will they suffice to carry it further, or even to maintain it at its present level?

"This is a grave question. But a still graver question calls for our most earnest consideration, namely: Does our progressive civilization, while it makes ever greater demands on the qualities of its bearers, does it not tend to impair, has it not always in the past actually impaired, the qualities of the peoples on whom it makes these increasing demands?"—McDougall

"But the great mass of current discussion about moral codes and standards of conduct, about the ethics and sentiment of married and business and religious life and the like, this searching and probing into fundamental things which makes our contemporary literature and journalism so different from that of the last century, arises I believe, very largely out of a need, felt rather than recognized, of altering and adjusting our working habits and traditional methods to this very imperfectly apprehended change in human biology, this shifting of the center point of life from the twenties up toward the fifties—this rapid and disconcerting change in the course of a generation or so, of *homo sapiens* into a more completely developed, longer-living and more persistently vital animal"—Wells

CHAPTER II

The Hazards and Shortages of Modern Industrial Life

The Problem Examined.—On every hand there are signs that modern industrialization has produced many unfortunate changes in the lives of many people. Some students of this problem believe that the basic biologic stock has been impaired so that inevitably future generations will be weaker unless prompt eugenic measures are instituted. Others believe that the effects are personal, that the weakness and degeneracy of modern man are the sure product of the life he has had to live, and that future generations will secure an adequate inheritance if only the customs and habits of our time can be changed. These two views are still to be proved. In one fact, both agree—modern industrial life is characterized by hazards and shortages which are reflected sharply in the biological status of man.

In support of the belief that our biological status is woeful there is cited evidence from a wide variety of sources: army statistics, insurance data, comparative conditions of health status, social practices, hospital and medical records. In the face of the accumulated mass of defect and deficiency there is little disposition to gloss over the picture. This is fortunate indeed because modern life exacts great sacrifices from the biological resources of man.

The earliest life of man and modern industrial society are contrasts. In some respects they are opposites. Modern man is born into a world quite foreign in important respects to the environment of earlier generations. To sketch this early life of man, and compare modern industrial society with it in its opportunities and its limitations, are the first steps to be taken in understanding the nature of man and the principles to evoke in his physical education.

Primitive Life.—There is an accumulated body of evidence to indicate that man has lived on the earth at least 500,000 years.

This half million years has seen little change, until recently, in man's manner of life, in his habits, and even in man himself. In his earliest period, characterized chiefly by the traits and reactions of an animal, the brain size was slightly less, the jaw was somewhat heavier, and the position of the heel bone and the shape of the little toe were somewhat different. From the Cro-Magnon man, a savage by modern standards, who lived 50,000 years ago, to the product of twentieth-century civilization, the evidence indicates little, if any, change in physical or mental resources.

Obviously, his life as a primitive savage is very obscure. Nevertheless, on the basis of what is known it is a fair statement to say that nothing in modern civilization is comparable to its poorness, brutishness, and filth. Even the slums of the cities are unable to produce anything as revolting. Primitive life contained nothing attractive in food, shelter, clothing, or safety. The modern camper who goes to the woods "to be a savage again" knows nothing of being without vessels to hold water, and never experiences the necessity to strike fire from flints, to eat insects, decayed fish, and putrid flesh.

One can only surmise the steps in that struggle upward from poor, brutish states to higher levels of power and achievement. For long periods accustomed to small groups, hundreds of thousands of years must have elapsed before pastoral and agricultural life made large groups possible. With the coming together of many to form the tribe there developed the opportunity for leadership. The chief, the prince, the king were those who had initiative. They ruled until those more powerful replaced them. There was always work to be done and laborious hours were given to things that are simple and commonplace today. Fire, clothing, shelter, food, safety demanded the efforts of the group, and required the labor of all. There could be no parasites, no leisure group, no non-producers. Leisure then was not the problem for our primitive ancestors; all labored for long hours, but without hurry. In this respect, these ancestors of ours must have been something like the laborers of the Orient today.

Plagues, epidemics, and famine were the great calamities. The fear of disease that people have today goes back to racial experiences of man with calamities that came upon the group without knowledge of their causes and without knowing what to do.

Life was hard. Those who lived and survived to reproduce their kind were the strongest, the fittest. The death rate was appalling, as judged by modern standards; in some cases the defective were destroyed without compunction, in others they were allowed to live out their miserable existence, and to propagate their kind. It would probably have been impossible to find any representatives of a tribe who could run as fast, jump as far, and throw as accurately as the members of the American Olympic team of any period since the revival of the Olympic games. Altogether primitive life offers nothing that one would wish to go back to, because its best elements, such as outdoor life, are possible in modern civilization to an increasing degree, as its joys and values become known.

Modern Industrial Life in the United States.—The beginnings of civilization are marked by the triumph of man over the world of nature. Thousands of years passed between the invention of a wheel for drawing heavy loads and the printing press that made possible a continuous and easy record of man's accomplishments. To the middle of the nineteenth century, generation after generation has lived in a simple, agricultural environment, with only a few cities that attracted the merchants and the ruling classes. The masses lived upon the land. In a remarkably short period of time, a few minutes in the life of the race, great numbers have been taken into sedentary occupations, collected into shops, stores, and business houses, forced by economic consideration to cluster in large groups in one locality.

The majority of people in the United States are living under urban conditions today. The concentration in cities shows in New England over 75 per cent of the population, in the Middle Atlantic States nearly 80 per cent, and in New York State 80 per cent. In New York City the tenement houses occupy 70 to 90 per cent of the lot area, and twenty families are crowded upon a spot where a generation ago there was but one. Great numbers of the people of America whose ancestors were engaged in outdoor life or in work calling for muscular effort are now indoors, and working day after day without enough physical exercise to put them into a perspiration.

The items in this industrialization are well known: the change from hand to machine work, from man power to steam, from

home work to factory work, division of labor, aggregation of workers, women and children in industry.

Degeneration in Civilized Society.—The degeneration of man can be placed at the door of the machines which he has created. The vitality and vigor of his biological nature, kept strong through the years by the efforts required by the life he led, are today weakened by indolence and absence of effort. It is not strange that degenerate behavior should manifest itself in devitalized protoplasm. The cultural factors in his degeneration are machines which he has produced and security which he demands. By a strange turn of the wheel of fate, these two forces act to reinforce each other. More machines decrease his necessity to work but increase his dependence upon doles and governmental grants while these in turn force an increased use of machines to supply the source of wealth from which the doles derive.

It is the clear and unmistakable record of man's biological past that he must work with both his brain and his muscles in order to maintain his health and strength. He must walk with his legs in order to stay erect. To continue the process—and even to maintain it—which freed his hands from the ground and the quadruped position, man must continue to use his legs in the erect biped position. Not only gravity but also the pull of a long quadruped past attempts to drag him back to the primordial mud. Modern man faces the grim necessity of preserving the achievements of his evolution. To stand on his own feet is an imperative direction from nature.

Before the power age, the great majority of mankind struggled with brain and muscles to find food, shelter, and clothing. The satisfaction of these needs required long hours of patient, hard work, usually out of doors. The individual functioned in every fiber of his organism in the effort to maintain himself. As machines were invented and power applied to them, the necessity for effort and struggle in manual work gradually decreased. Today there is no real work for millions of men and the only labor they know is the stupid pushing of buttons, stacking of trays, and similar dull routines of an industrial age.

Moreover, the machine has done more than to bring destruction of his physique and strength. A victim of the machine, which now produces more than the labor of many men, he is thrown out of

work and is given a dole—thus completing his degeneration. The machine degenerates him physically and mentally, the dole mentally and morally. No amount of social work, political whitewash fed to the American people during the depression can obscure the fact of moral degeneration. When some moving picture actors and actresses of the three thousand dollars a week class *apply for* and *receive* their eighteen dollars a week unemployment benefits during the periods "off the lot," the extent of moral degeneration may be estimated.

Modern War and Degeneration of Man—Modern war destroys the best part of the male forces of a nation. The rigorous selection of the fit for the fighting arms of the military services and the rejection of the unfit for hazardous posts are stupendous cultural forces affecting the welfare of mankind. The first World War with its enormous casualties left Europe impoverished in human materials. The breakdown of France, the appeasement of England, and the paranoia of Germany may be, quite properly interpreted as social phenomena of weakened nations.¹ The present generations in Germany now fighting were the children of the first World War and its aftermath. Struggle develops men but nothing is more absurd than the German dictum that war strengthens a nation.

The devitalizing effects of prolonged war may be ameliorated by wise, intelligent action. England and France never visualized the magnitude of the problem and like the United States engaged in humanitarian efforts, buying political support of the masses who were hungry, physically degenerate, and morally corrupt. Their vigor and vitality were gone along with their pride and independence of spirit. These governments made no real attempt at all to build up the biological resources of their people.

Germany and a Degenerate Generation—German soldiers today are the infants of the World War generation and its aftermath of confusion, poverty, and despair. They lacked proper food, were malnourished, and suffered from widespread disease. When Hitler began his actual attack on the democracies, he had at his command an army of vigorous, alert, and competent youth. Something had happened during the intervening years.

When Hitler came to power he found youthful gangs and criminals roaming the cities, degenerate forms of social vice flourishing.

¹ Undset, Sigrid. *Return to the Future*. Knopf, New York, 1942, pp. 207-251.

and every evidence of human degeneration. With characteristic German thoroughness, the Germans set to work to strengthen the biological fiber of their youth. Science was enlisted with its knowledge, competence and experience were utilized.

They put young men into labor camps and while weaving around their procedure much foolish talk about racial purity, they carried out the simple process of having all young males engage in manual work out of doors. They set up standards of personal hygiene and inculcated attitudes of self-denial, self-discipline, and cooperative effort toward a greater Germany. We in the United States do and ought to disagree sharply with the final purpose of this devoted effort, with the cruelties, vile obscenities, and vicious crimes of the Nazi regime, but we should not be so stupid as to condemn everything achieved under the Nazi dictatorship nor so uninformed as to believe that we too must be ruthless, dictatorial, and imperialistic in order to rebuild the biological resources of American life.

Evidences of Our Biological Weakness.—In what areas of human life may be found the data of our degeneration? They are apparent on every hand but the items fall into several categories. These are (1) the results of the Selective Service Act (1917) and the Selective Training and Service Act (1940), (2) defects and deformities in school children, (3) preservation of the unfit; (4) defects and deformities in university students; (5) loss in racial endurance particularly in women in child-bearing; (6) the question of longevity, (7) the increase in insanity and cancer; (8) defects in urban and rural groups, and (9) the prevalence of disease in adults.

The Selective Service Acts and Their Revelations.—The figures of rejections in the draft are often misunderstood. The Act of 1917 called to service all males between twenty-one and thirty-one years of age. It selected about 60 per cent. Inasmuch as there is no comparable examination available of the young men of the nation at other periods, it is impossible to tell whether or not the situation was better or worse. Study of the rejections as given in Fig. 1 shows that the great majority of the defects listed are preventable, they are defects of environment and of development rather than of heredity. They are in the main defects which require medical, surgical, and educational treatment.

The Act of 1940 followed a different procedure. Males between twenty-one and thirty-six years of age were called. Of this call four groups were exempted: (1) college students, (2) medical and engineering students, (3) married men with dependents, and (4) men in essential industries. It is obvious that college and professional students who have experienced quite generally physical education, hygiene, and health service programs in college and university are probably the fittest groups we have in America, that men who can marry and men who can hold responsible jobs are also reasonably fit. In short the Act of 1940 selected from the less fit part of our population. Nevertheless, of about two million registrants examined about 50 per cent were found to be unqualified for general military service by local boards and Army induction stations. Of the million unfit, 900,000 were refused because of physical and mental defects and 100,000 because of educational deficiencies. Of the defects which disqualified, the items are: teeth (20.9 per cent), eye (18.7), cardiovascular (10.6), musculoskeletal (6.8), venereal disease (6.8), hernia (6.2), ear (4.6), feet (4), lungs (2.9), and miscellaneous (17.7) (Fig. 2).

In a preliminary report by the Selective Service System it is noted that of the 900,000 rejected because of physical and mental defects, 200,000 can be completely rehabilitated.²

It is apparent from the experience of 1917 and 1940 that the disqualifications of youth for military service are the result, in part, of carelessness, ignorance, and neglect. Schools and local communities have failed to visualize their functions. Schools teach dental hygiene to children many of whom show gross dental defects and then do nothing about the problem except to write letters to parents who are too poor to employ private dentists. Defects of eyes, ears, and teeth, hernias and malnutrition in youth are the product of a culture which is callous to the biological values in human life. The school, generally devoted to training the mind, is not yet awake to the insistent needs of society and the human tragedies in individual lives.

Moreover, even the boys who pass the examinations are not vigorous enough, alert and strong enough for some of the special services. The three-month physical education program for the air

² Analysis of Reports of Physical Examination. Medical Statistics Bulletin, No. 1. Selective Service System, Washington, D. C., 1941.

ESTIMATED NUMBER OF SELECTEES REJECTED

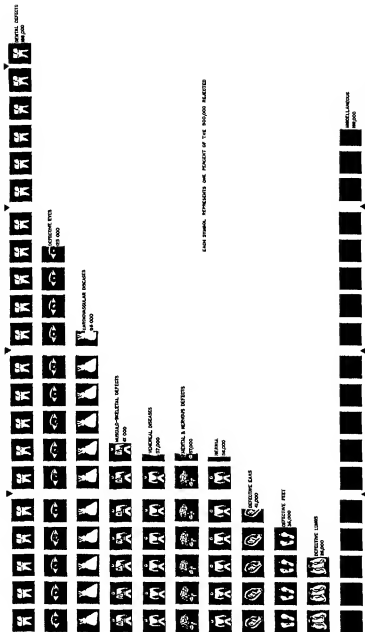


Fig. 2—The number of rejections for military service compared as to causes for rejection. Each symbol represents 9000 men

arm of the navy and army before technical instruction is given indicates the need for a greatly extended program of physical education in our schools

Defects and Deformities in School Children—Collins in a report³ of the physical examinations given by Public Health Service physicians to over 30,000 children, presents the items of the examination and percentage of defects found. These are shown in Fig. 3.

As chairman of the Joint Committee on Health Problems in Education, Wood reported in 1930 that the defects in children show 0.7 per cent organic heart disease, 50 to 98 per cent decayed teeth, 1 to 5 per cent tuberculosis, 30 to 40 per cent adenoids and diseased tonsils, 25 per cent defective vision, 25 to 40 per cent defective posture and foot arches, and 15 to 25 per cent malnutrition.

White House Conference—If Wood's estimates are reliable they probably portray the picture of defectiveness in children today. The studies of the White House Conference on Child Health and Protection tend to support the estimates of Wood. Moreover, nothing has developed nationally in school health programs to lead to the belief that the picture is greatly changed.

There are instances of excellent work in scattered areas. For more than thirty years demonstrations and special class experimentations have given illustration of programs and methods which might be helpful in preventing and correcting the defects of children.

An exceptionally fine study by Hardy and Hoefer⁴ shows the advantages which result from participation in a health education program. Growth, development, and increase in strength are definitely more marked in those children who were given the advantages of health service and health instruction.

This kind of evidence reinforces the indictment against current educational and social policies. We are and have been negligent of the biological aspects of human life. Public education, devoted to mental training, gives only casual or indifferent attention to the health and physical education of children.

³ Collins, S. D. *The Health of the School Child*. U. S. Public Health Service Public Health Bulletin No. 200, 1931.

⁴ Hardy, M. C., and Hoefer, C. N. *Healthy Growth*. University of Chicago Press, Chicago, 1936.

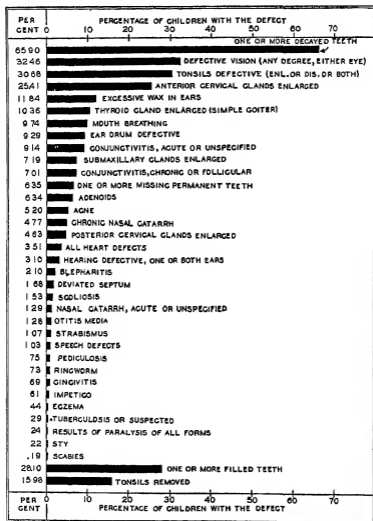


Fig. 8—Average prevalence of certain physical defects and diseases (all degrees of severity) as found on physical examination of several groups of white school children of all ages by medical officers of the U S Public Health Service (U S Public Health Service, Bulletin No 200, August, 1931)

Preservation of the Unfit.—It is sometimes argued that the cumulative effect of medical science and social service upon the vigor of the human race may act to preserve the biologically unfit and so may serve to weaken the stream of human life. Infant welfare work is cited frequently by Pearson, Snow, and others as contributing to racial degeneration.

Hooton⁵ supports this view as follows

"Medicine in its present semi-skilled status saves millions of lives, the most of which are not worth saving, because they are infirm in body and in mind. . . Society can perhaps tolerate the burden of supporting hundreds of millions of patched-up cripples and invalids who have become casualties through war and the ravages of acute infections, but it cannot withstand the drain upon its economic and biological resources which result from subsequent proliferation by breeding of the constitutional inferiors, hereditarily diseased, feeble-minded and insane."

A study by Falk of statistical data of infant and child death rates in Chicago over a period of twenty-six years failed to show any substantiation of the belief that infant welfare work operates to preserve the unfit. Falk⁶ says,

"I can find no evidence for, and much that is opposed to the view, that the savings in subsequent years of life would have been greater if there had been no reductions in infant mortality. . . It has been found, also, that infant mortality, whether from all causes, from diarrheal or from congenital causes, fluctuated synchronously with the general mortality of the population."

The social effort to remove the causes of early death and needless disease is in reality neither eugenic nor dysgenic. The general service of medical science to man starts with the call of human need. It goes no farther. It is not science but society with its gross sentimentalities which is responsible for the failure to use science in a social treatment of hereditary disease, feeble-mindedness, and insanity. Physical education may devote its skills to the weak,

⁵ Hooton, E. A. *Why Men Behave Like Apes and Vice Versa*. Princeton University Press, 1941, p. XVII.

⁶ Falk, I. S. Does Infant Welfare Work Preserve the Unfit? *American Journal of Public Health*, February, 1927, pp. 142-147.

deformed, and diseased without fear that it is contributing to racial degeneration. The eugenic problem is with the germ, not the soma. Scheinfeld⁷ observes

"Better education, better hygiene, better standards of living can far more easily and more rapidly reduce the number of unfit than can any arbitrary process of breeding."

Defects in University and College Students.—College faculties and trustees have been interested in the health of college students for many years.⁸ In 1859 Amherst College appointed the first Professor of Hygiene in an American college. The development was slow, but in 1907 Meylan in a study of hygiene programs reported that 84 per cent of the 32 larger colleges studied offered courses in hygiene and 50 per cent had college physicians. This movement grew haltingly and often with provision of staff and facilities far below standard. Later, subsequent studies called attention to the weaknesses and instead of complacency over advances these reports are critical of the lacks.

In the many surveys of the health status of college students, there is little uniformity of findings, undoubtedly due in part to the lack of standardization of the examination. Considerable data, however, exist. The more prominent defects are dental, nutritional, visual, nose and throat, bodily mechanics, hearing, heart and circulation.

Dental Defects—These comprise the most frequently found defects in college students, showing 60 to 70 per cent, according to examinations by nondentists and dentists respectively. The per-

⁷ Scheinfeld, A. *You and Heredity*. Frederick A. Stokes Co., New York, 1939, p. 305.

⁸ Meylan, G. L. *Status of Hygiene in American Colleges*. *Proceedings, American School Hygiene Association*, I, 1908, 77.

Forsythe, W. E. *Health Services in American Colleges and Universities*. *Journal American Medical Association*, LXIII, 1914, 14.

Edmunds, W. P. *Student Health Service Survey*. *Nation's Health*, III, 1921, 325.

Chenoweth, L. B. *Administration of Student Health Service Expands*. *Nation's Health*, VIII, 1926, 926.

Storey, T. A. *The Status of Hygiene Programs in Institutions of Higher Education in the United States*. Stanford University Press, 1927.

Rogers, J. L. *Student Health Service in Institutions of Higher Education*. *U. S. Office of Education Bulletin*, No. 7, 1937.

sistence of the high rate of dental defects in children into the years of youth is not surprising.

Nutritional Defects—Emerson⁹ in 1902 called attention to nutritional defects in college students and the relationship to student health. Later Diehl and Shepard¹⁰ reported similar defects with almost 30 per cent of college students 10 per cent or more under standard weight. An earlier study by Diehl¹¹ reported that college students are heavier and taller than men and women of the same age in the general population. Specifically, college men of eighteen years are 2 inches taller than applicants for life insurance and army recruits, college women are 1 inch taller than women applicants for life insurance of the same age. In weight, college men in the same comparison are 6 pounds heavier, and women are heavier at sixteen years, equal in weight at seventeen years, and lighter at eighteen years. If the relationships shown in these data hold quite generally, then young men not in college will average 30 per cent below standard weight.

Mosher¹² in a study of college women reported an increase in height and a decrease in dysmenorrhea as compared with earlier college generations (Table I). These changes are due, according to Mosher, to a change in fashion of dress and greater participation in outdoor games and athletics (Fig. 4). Doctor Mosher concludes her report with these words:

"It is time that we ceased thinking in terms of the unfitness and weakness of women. This splendid modern woman, grown taller and more vigorous because, freed from restricting fashion and dress, she exercises more and consequently eats more, has become better fitted to be the mother of finer sons and daughters, the promise of a stronger race."

Vision Defects—Diehl and Shepard¹³ in a study of 3636 college students report about 11 per cent of uncorrected or improperly cor-

⁹ Emerson, W. R. P. Physical Unfitness in Preparatory Schools. *American Journal Diseases of Children*, XLIV, 1932, 509.

¹⁰ Diehl, H. S., and Shepard, C. E. The Health of College Students. American Council on Education, Washington, 1939.

¹¹ Diehl, H. S. Heights and Weights of American College Men and College Women. *Human Biology*, September and December, 1933, pp. 445 and 600.

¹² Mosher, C. D. Some of the Causal Factors in the Increased Height of College Women. *Journal American Medical Association*, August 18, 1923, pp. 535-538.

¹³ Diehl, H. S., and Shepard, C. E. *Op. cit.* p. 32.

TABLE I
HEIGHT OF 21,383 COLLEGE WOMEN BY YEARS

College Year	Stanford University.		Smith College		Vassar College		Stanford, Smith and Vassar combined (21,383).	
	Number of women	Average height, inches	Number of women	Average height inches	Number of women	Average height, inches	Number of women	Average height, inches
1884-1885					90	63 5		
1886-1886					39	62 8		
1886-1887					31	62 5		
1887-1888					41	63 5		
1888-1889					52	62 9		
1889-1890					59	63 4		
1890-1891					51	63 4		
1891-1892	94	62 4			113	63 1	207	62 8
1892-1893	91	63 2			127	63 0	218	63 1
1893-1894	89	63 0			129	63 1	218	63 0
1894-1895	124	63 3			105	63 4	220	63 4
1895-1896	108	63 0			146	63 0	254	63 0
1896-1897	127	63 4			164	63 5	291	63 4
1897-1898	124	63 2			201	63 5	325	63 4
1898-1899	124	63 2			185	63 5	309	63 4
1899-1900	117	63 5	300	63 2	218	63 6	635	63 4
1900-1901	118	63 4	335	63 6	222	63 8	675	63 6
1901-1902	104	63 8	262	63 5	200	63 9	656	63 7
1902-1903	150	63 8	309	63 6	220	63 7	679	63 7
1903-1904	102	64 9	307	63 7	207	64 2	616	64 2
1904-1905	99	62 9	403	63 3	247	64 0	689	63 4
1905-1906	78	63 5	406	63 6	208	63 8	692	63 6
1906-1907	158	63 8	469	63 0	160	64 0	787	63 6
1907-1908	180	63 6	445	63 2	205	63 8	920	63 5
1908-1909	63	63 5	494	60 9	286	64 2	843	62 0
1909-1910	133	63 9	501	63 4	260	64 2	804	63 8
1910-1911	193	63 6	454	63 5	267	63 8	914	63 6
1911-1912	131	63 8	414	63 8	256	64 3	891	63 9
1912-1913	91	63 7	480	63 2	276	64 1	847	63 7
1913-1914	146	63 7	498	63 6	296	64 2	940	63 8
1914-1915	168	63 0	545	63 6	343	64 1	1056	63 9
1915-1916	178	63 7	526	63 7	303	64 2	1007	63 8
1916-1917	170	64 0	642	63 6	227	64 1	1039	63 0
1917-1918	238	64 2	646	64 1	241	64 4	1125	64 2
1918-1919	276	63 8	730	64 3	228	64 5	1234	64 2
1919-1920	157	63 6	479	64 1	242	64 4	878	64 0
1920-1921	299	64 0	504	64 0	296	64 7	1090	64 2

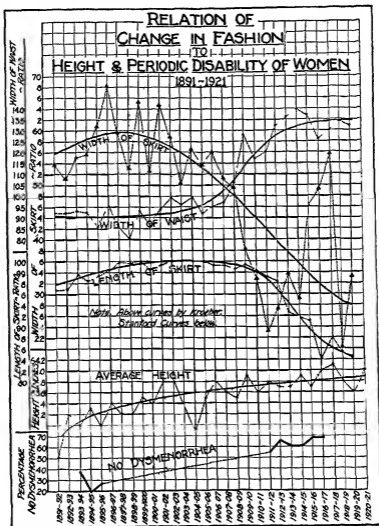


Fig 4.—Relation of change in fashion to height and periodic disability of women, 1891-1921 (Mosher, *Jour Amer Med Assoc*, August 18, 1923)

rected visual defects Of the group studied over 20 per cent were wearing glasses. This figure (20 per cent) is slightly lower than Wood's estimate of children's visual defects (25 per cent).

Nose and Throat Defects—Many college students show defects in nose and throat These comprise such defects as deviated septa, chronic infections, spurs, polyps, and diseased tonsils. These defects range from 3 to almost 20 per cent. The largest group is deviated septum which may not be a very important defect although this condition is sometimes the cause of repeated colds in the nose.

Defective Body Mechanics—Stafford in a study of the handicaps of college students reports that fully 80 per cent of college students have poor or very poor body mechanics¹⁴ These range from defective foot arches and faulty postures to orthopedic cases such as paralyses and deformities Other estimates are not so high, giving about 20 per cent faulty postures and 20 per cent flat feet Great variation in the standards of body mechanics accounts readily for the discrepancy

Hearing Defects—The incidence of hearing defects among college students is not known, and comparisons of groups studied are worthless due to differences in the examination technic Watch and whisper tests are commonly used, but the findings are not reliable.

Heart and Circulation Defects.—Hedley¹⁵ reported the incidence of rheumatic heart disease among college students This varied in institutions studied from 0.6 per cent to 1.9 per cent. Alvarez¹⁶ in a study of students at the University of California found systolic blood pressures of over 130 mm Hg in almost 50 per cent of the men and 10 per cent of the women first-year students. In a study by Diehl and Shepard¹⁷ 2 per cent showed blood pressure of 151 mm Hg or higher, nearly 5 per cent showed pressures of 141 to 150, nearly 70 per cent 111 to 140, 18 per cent 100 to 110, and nearly 6 per cent 100 or less The range of 110 to 140 mm Hg is regarded as normal

¹⁴ Stafford, G. T. *Sports for the Handicapped*. Prentice-Hall, Inc., New York, 1939, p. 263.

¹⁵ Hedley, O. F. *Incidence of Rheumatic Heart Disease among College Students in the United States*. *U. S. Public Health Reports*, LIII, September 16, 1938, 1635.

¹⁶ Alvarez, W. C. *Blood Pressure in 15,000 University Freshmen*. *Archives of Internal Medicine*, XXXII, 1932, 17.

¹⁷ Diehl, H. S., and Shepard, E. C. *Op. cit.* p. 41.

Loss in Racial Endurance Particularly in Women in Child-bearing.—Those who view modern civilized women through dark glasses find one outstanding comparison in the differences between primitive and modern woman in physical endurance, particularly in child-bearing. There are comparisons that seem convincing at first sight. It is quite unlikely that one would find in modern civilization a woman who could perform the feat described by Lewis and Clark in their famous journal ¹⁸

"One of the women who had been leading two of our pack horses halted at a rivulet about a mile behind, and sent on the two horses by a female friend. On inquiring of Cameahwait the cause of her detention, he answered, with great apparent unconcern, that she had just stopped to lie in, but would soon overtake us. In fact, we were astonished to see her in about an hour's time come on with her new-born infant, and pass us on her way to the camp, seemingly in perfect health."

It is assumed by those who are pessimistic about modern woman's physical vigor that physical capacity for labor was the result of hard physical work, and, since modern civilization fails to require physical work in the home, that nothing can take its place.

For purposes of comparison of the above parturition and postpartum period with modern parturition in a hospital, and a two to three weeks' postpartum period, it would be helpful to have data of the number of uterine displacements, prolapses, and infections in women of the two types. Nothing is available for such comparison, and hence no warranted conclusions can be drawn. If we had the results in pathology that accrue from such ability, primitive labor might not appear so attractive.

Moreover, it is extremely unlikely that this single item can be taken as evidence of modern woman's physical deterioration, because of the pronounced achievements of women in physical activities today. It is questionable if primitive women, heavy, awkward types, ever equalled the endurance of many of our modern Junos as shown in tennis, swimming, mountain climbing, and similar athletic activities. Since these modern women are bearing

¹⁸ Lewis and Clark's Journal, Record of Trip to the Northwest Passage. Dodd, Mead & Co., New York, 1905, vol. III, p. 40.

healthy children, and themselves living long lives, it is quite unreasonable, indeed, to parade the phlegmatic, heavy, low-threshold females of earlier days as superior to the modern types.

It is true that social custom tends strongly to make of modern women creatures of decoration, without worthy social purpose, concerned with thoughts of their clothes, their illnesses, and their petty quarrels, but the movement in recent years among girls for generous participation in athletic sports, and for more hygienic fashions in clothes, is doing much to break down these standards, and to contribute to the wholesome physical development of womanhood.

It should also be remembered that women give birth to children who live or die. "Effective fecundity is more important than the birth-rate." Modern women, with more knowledge, more skill, more interest in babies, are better mothers for the race than ignorant, awkward, and brutish females who can go through labor alone and afterwards tramp a dozen miles with their babies on their backs. Modern civilization in its aims and effects may be segregated for purposes of definition. For purposes of constructive suggestions for education, all the influences must be synthesized into a whole.

If the case for modern woman is not hopeless, what about the race in general? Are there signs of significant retrogressive changes in man? The evidence shows that since the earliest times few changes have occurred in the physical body of man. Chief among the changes in the last 100,000 years have been a decrease in the size of the little toe and an increase in the size of the great toe. It is possible that some changes are taking place in the teeth, jaws, face, throat, cecum and appendix, but any considerable change in the nature of our food supply might alter the tendencies that seem to be operative in this direction. The size of the human brain has not changed since the Cro-Magnon race, 50,000 years ago, wandered over Europe. There is no increase of human intellect in the last 2000 years, but only an increase in knowledge. Comparing twenty-five illustrious men of Greece with illustrious men today, Galton concludes that the average mental ability of the Athenian race is as much greater than the average English, as the average Englishman is greater than the African Negro. The ex-

amples from Greek life came out of a highly selective society, in comparison with modern democratic groups. Such judgment, however, fails to support the notion of hereditary degeneration in modern man. Superiority of the English over the African Negro may mean many things, but it can hardly be interpreted as evidence of the excellence of primitive life.

The evidence is clear that large numbers of persons are unfit. There is a great deficiency in endurance and stamina. The modern man with flabby abdominal muscles, protruding paunch, depressed chest, weak arms and legs is the sure product of the life he lives and not of his debased biological inheritance. His own children can achieve a state of which he *was* capable. They can become excellent examples of *homo sapiens*, if he and others of like will decide upon a different education for children—different in the home, in the school, and in the community.

The Question of Longevity.—The notion that man is living longer is misleading. When the average expectation of life increases from forty to fifty to sixty years of age, this is an interpretation of statistical data dealing with many individuals and representing in fact no one person. It does not mean that you can expect to live longer than your parents. The chances of survival after birth are better for all persons, but after middle age is reached, the chances are no better today, in fact they are a bit worse since mortality rates in this latter age group are rising.

Studies of insurance data show that persons with a record of parental longevity show a mortality rate below the average. Pearl¹⁹ in his studies on longevity supports this hereditarian emphasis and concludes that heredity is important in determining the length of life of an individual. Environment is also important. Usually persons who live long enjoy protected childhood and an economic status which is free from severe stress and strain. This is an environmental influence.

Studies in nutrition indicate that length of life may be related to the food supply. Sherman,²⁰ on the basis of studies made on rats, predicts that proper nutrition of the individual will prolong the life span.

¹⁹ Pearl, R. *Alcohol and Longevity*. Knopf, New York, 1926.

²⁰ Sherman, H. C. The Bearing of the Results of Recent Studies in Nutrition on Health and on Length of Life, *Bulletin New York Academy of Medicine*, June, 1937.

The Increase in Insanity and Cancer.—Recorded insanity is increasing, but it should be noted that there is also, in recent years, an increase in institutional treatment, with correspondingly more cases confined, and hence more available statistics. Almshouses for generations housed not only the poor in need of domiciliary care, but also vagrants, lying-in women, pensioners, imbeciles, and the insane. Today there are few insane in almshouses, and hence more in the statistics from institutions for the insane. The change in attitude toward the insane also accounts for a recorded increase. Instead of viewing the insane person as possessed of the devil in need of exorcism, such a person is held to be sick and in need of special care. Scientific medical treatment of the insane keeps them alive longer, and hence increases the number reported at any one time. Keeping the insane alive longer may result in more children from such impaired stock.

Nevertheless, the large number of nervous and mental cases in hospitals is a matter of great importance. Many of these are the wrecks from the last war. Many are the product of a competitive life too hard for them. All are, however, potentially inferior in a biological sense.

With insanity physical education has no relationships. With nervous and mental disease of lesser severity than insanity, physical education is increasingly useful—not as exercise but as a way of return to basic expressional patterns, to simple movements and coordinations, and to objective activity.

It is a fact that the statistics show an increase of cancer. This may not be a relative increase but merely the fact that more cases are diagnosed as cancer, and actually more cases in number. The total number is not significant at all, it is the relative increase or decrease that is important. To what extent cancer is an expression of the hazards and shortages of modern life is not known. The mortality from cancer has remained practically unchanged during the past twenty years.

Defects in Urban and Rural Groups.—There is evidence to support the belief that life in the open country as now lived is less favorable to man than that in the city and that the country child is less healthful than the city child. Wood concluded from a study of the health of school children that physical defects are greater in rural than in city children. Other investigations seem to bear out

this point and Shepard and Diehl²¹ report that college students in the University of Minnesota who have been raised in villages and on farms show more physical defects than those raised in large cities. As regards the occurrence of communicable diseases, village life appears to be distinctly less favorable and country and city are about equal in the incidence of the common diseases. These studies are not complete. They either do not have the wide distribution of cases so essential in the determination of trends, or lack the standardized examination and the uniformity of records desired.

It is to be remembered, however, that the urban dweller has been conscious of the limitations of his environment and has made constructive efforts to remedy its defects. This is in large measure responsible for the standing that he has made in comparison with his country cousin.

On the contrary, the Provost Marshal General²² reported a greater percentage of rejections among urban registrants than among rural ones. "Urban communities were selected from boards in the cities of New York, Chicago, Philadelphia, Cleveland, Milwaukee, Seattle, St. Louis, Cincinnati, and New Orleans. Rural communities were taken from all states using only boards having less than 1200 registrants in the June 5, 1917, registration." Table II indicates the results.

TABLE II
RURAL AND URBAN PHYSICAL REJECTIONS COMPARED

	Rural and urban groups	Number	Percentage of examined
1.	Total examined in 100 selected urban and rural regions	200,000	
2.	Rejected in 100 selected urban and rural regions	38,359	19.28
3.	Examined in urban regions	100,000	
4.	Rejected in urban regions	21,675	21.68
5.	Examined in rural regions	100,000	
6.	Rejected in rural regions	16,684	16.68

²¹ Shepard, W. P., and Diehl, H. S. Rural and Urban Health, *Journal American Medical Association*, October 11, 1924.

²² Second Report of the Provost Marshal General, Washington, D. C., Government Printing Office, 1919, p. 159.

The present analysis, based on city population for aliens and other than city groups for native born, favors the rural communities. Percentage rejections of those examined shows in 100 selected urban and rural regions, 21.68 per cent for the former, and 16.89 per cent for the latter. There is, then, by the army figures a considerable physical advantage for the boy reared in the country.

The statistical study by Love and Davenport,²³ confirmed the report of the Provost Marshall General. The difference they found was not outstanding and they raised the question if more rigid examinations of urban registrants might not account for the more favorable showing of the rural contingent. Quoting the exact words of their thorough and elaborate report we read the following: "For the whole United States there are found 557 defects per 1000 men examined, or considerably more than half as many defects found as men examined. This, then, is the number, deviations from which are to be discussed. For rural districts alone the rate is 528, and for urban districts alone it is 609, that is, fewer defects were noted by local boards and mobilization camp boards in registrants from rural than from urban districts, part of this excess of defects in cities is probably due to the more critical examination by the physicians of cities, and to a more critical grade of examiners in the camps that drew from the more densely populated regions."

The recorded proportion of defects in urban and rural districts is derived from sources in which the urban rate is from cities of 25,000 population or more and rural is all other. It would be interesting to have this comparison on the basis of cities of 8000 inhabitants or more.

Comparison of physical causes for rejection in urban and rural districts shows the following averages (Table III) for Maryland, Massachusetts, Illinois, Ohio, New York, East Pennsylvania, West Pennsylvania, and Missouri:

Table III shows a higher percentage among urban registrants for alcohol and drugs, developmental defects, ears, eyes, flat-foot, venereal disease, hernia, nervous and mental disorders, and respiratory disease (tuberculosis). The marked differences in the

²³ Love, A. G., and Davenport, C. B. *Defects Found in Drafted Men*, Government Printing Office, 1920, p. 348.

two groups are in items 3, 6, 7, 10, 12, 18, and 21. The country boy, by the figures of the Provost Marshal General, has a physical advantage over the city boy.

TABLE III
CAUSES FOR REJECTION—URBAN AND RURAL

Disqualifying defects	Average	
	Urban	Rural
1 Alcohol and drugs	1.9	0.6
2 Bones and joints	8.9	10.9
3 Developmental	9.7	6.8
4 Digestive system	0.2	0.8
5 Ears	5.8	4.4
6 Eyes	10.9	9.0
7 Flatfoot	9.8	7.4
8 Genito-urinary (venereal)	1.4	1.1
9 Genito-urinary (non-venereal)	1.2	1.5
10 Heart and blood vessels	8.0	10.4
11 Hernia	10.1	9.6
12 Mental deficiency	1.5	3.9
13 Nervous and mental disorders	4.6	4.2
14 Respiratory (tuberculous)	5.6	5.8
15 Respiratory (non-tuberculous)	1.8	2.4
16 Skin	0.1	0.2
17 Teeth	5.9	6.7
18 Thyroid	2.0	3.4
19 Tuberculous (non-respiratory)	0.1	0.1
20 Other defects	0.7	0.5
21 Defects not stated	9.2	11.9
	100	100

The final figures from the examinations of young men called to military duty under the Selective Training and Service Act of 1940 are not as yet available. A preliminary report²⁴ of 19,923 registrants shows that 38.1 per cent of rural and 42.4 per cent of urban youths were rejected. If this rate is maintained, it would appear that rural youth continue to be superior to urban youth for military service.

²⁴ Medical Statistics Bulletin, No. 1 Selective Service System, Washington, D. C., November 10, 1941.

The Presence of Disease in Adults.—In the adult population the prevalence of disease and defect has led some hygienists to remark that it was impossible to find an adult without some defect or habit that was distinctly detrimental to health. In various studies the percentage of moderate defect present requiring hygienic guidance or minor surgical, dental, or medical treatment ranges from 60 to 80. There are indeed few perfect persons.

We know very little of the prevalence of disease and defect among primitive peoples of earlier periods, but the widespread occurrence of disease among certain primitive peoples today²⁵ may be suggestive of the conditions that prevailed 50,000 years ago. While there are no authentic records of morbidity in ancient and medieval times, the short life span and the high mortality suggest for these periods an inferior physical status in comparison with the present. In the effort to secure the removal of preventable disease and defect today one may feel the need to picture the conditions with force and accuracy.

How Physical Education Views the Problem.—In the face of the enormous human weakness in physique, the wide prevalence of defects, and the evident need at all ages for vigor and stamina, there is a tendency to regard the function of physical education to be simply a corrective one. Modern man is weak and defective to an extent greatly beyond the necessities of the industrial age. His condition can be markedly improved. His weakness and lack of vigor can be prevented.

To do this, however, it is essential that physical education should *not* be organized exclusively for corrective purposes. It is primarily a developmental activity. The difficulty which confronts those who consider this problem is the hygienic character of exercise. Physical activity, if it has certain qualities, contributes to health, but all the experiences of living also contribute to health if they, too, are of certain well-known nature. Health flows from life which is lived in obedience to the laws of nature. It is not a quantity which can be increased, which can be measured, which can safely be worked for as an end.

²⁵ In a series of autopsies covering 100 cases at the Philippine General Hospital (Manila) on cases dying from other than the disease studied, it was found that over 90 per cent were infected with intestinal parasites.

Instances of physical weakness and defect which can be corrected by exercise call upon physical education to devise special exercises to be given to the particular children affected. This, however, is only a minor part of the program and should not be regarded as a major effort. For example, physical weakness of modern women is not to be combated by establishing in all the schools special abdominal exercises to be taught to all adolescent girls. The practice of offering substitutes has grown in education even as it has in religion, and special exercises are offered in physical education for lack of proper development in precisely the same way that devices for salvation from sin have been put forward as substitutes for character.

Clearly, physical education has the obligation to develop the whole man—his interests, his skills, his physique, and his attitudes. To express its function, however, in terms of rehabilitation and restoration is a mistake. While physical education in a limited field and for special purposes may be used in terms of correction or muscle training, it is a fundamental mistake to conceive of it as encompassed within the bounds of such a classification.

The Whole Man and the Whole Problem.—The hazards and shortages of modern industrial life are very real. They are subject to direct attack, and this approach should be made whenever there are means and methods available. The problem of sedentarianism, for example, is not to be solved by the direct attack, that is, by the simple device of exercising the individual. The whole man and the whole problem must be understood. In similar fashion, the more complex problems of our time require a total analysis.

The problem of play spaces for children reveals many aspects. The environment of the city, small town, and even country in places prevents the practice of fundamental motor activities and is, therefore, conducive to the development of physical and moral weakness. Instead of civilization producing a more orderly society, the widespread prevalence of crime shows plainly a breakdown of moral standards built up for generations. The causes of crime have been explained from different points of view, but many of the offenses of youth spring from a wholesome and natural desire for play, for adventure, for dramatization which are denied the child in the modern city. Play and recreation have been thoroughly com-

mercialized, so that persons grow into adulthood knowing nothing of play and self-expression. Physical education carried on in the schools as a means of health or as a postural activity usually neglects important goals which even alone justify the program in a plan for the education of children. The whole recreational and play life of the child, therefore, should be correlated with the physical education of the school, and the needs of the boys and girls for development should be seen in relation to the needs of adults to have wholesome opportunity for recreation. The community which organizes its schools, plans its physical environment, and selects its leaders with the view that education is life, and the purpose of life is complete functioning of the whole nature of man must, of necessity, cease to think of physical education only in terms of posture, perspiration, and exercises.

Modern man is not perfect, and industrialized society is far from perfect. He lives under many handicaps, and suffers from many limitations which should be removed. The matter must be seen as a whole. Education in the school must be tied up with the play life of the child out of school. Skills, attitudes, powers are to be viewed constantly in terms of the entire life of the individual. Hence, physical education is not conducted in schools for the sole purpose of exercise, although if well led and supervised it should contribute to the individual's strength, power, and vitality, but it is planned and purposed to secure organic development, appreciation, skills, and attitudes that will make for self-expression, play, recreation, wholesome use of leisure time, and richness and fullness of life.

In this emphasis upon the whole man we do not ignore the serious shortages among modern men. It is also encouraging for the future to read the results of a recent study in which the authors write

"The main significance of this study . . . lies in the fact, that for the first time, evidence has been adduced to show that the low standard of fitness and efficiency, which is found in a section of the South African population, is not due to a basic biological defect, but that it is largely the expression of environmental shortcomings. It can now be said that physical training, in combination with an educational system conducted under conditions of discipline, and supplemented by a satisfactory nutritional régime, are

capable of producing and maintaining a highly satisfactory standard of health and of labor power of practically every European South African."²⁶

The Changing World—Moreover, it is a mistake to conceive as fixed any of the conditions of the present environment. To think of modern conditions, scarcely over one hundred years old, as set, leads at once to the offering of substitutes to make up for the defects of opportunity. The business of physical education is to establish the needs of boys and girls, needs that have existed for at least 50,000 years, and help to make clear the needs of happy, healthy adults. The increase in nervous and mental diseases should make us wish to provide a physical education that will strengthen the basal centers of the nervous system. An industrial era that produces a type of life in which man has no need to use judgment, thought, or skill in his vocation, is just the kind of culture that can be changed. Society can provide that kind of environment in which society believes. On the other hand, if conditions of the present are viewed as fixed and immutable, then physical education is brought forward as a great corrective, palliative, remedial agency, removing waste products, strengthening foot-arches and abdominal muscles, enlarging chest capacity, and increasing strength of grip. Its failure in this direction has never been fully recognized, due to the everlasting promise of the enthusiastic proponents of the method.

The other way is more difficult, but it presents a sounder view. It appears as an advocate of the essentials for a happy, healthy life. It proposes, quite indirectly, to combat sedentary living by educating boys and girls so thoroughly in enjoyable activities that they will be persuaded to continue them after school days are over, it proposes to secure more and abundant opportunities for recreation, it seeks to awaken in people to a far greater degree a love for the out-of-doors, and therefore includes in its program many activities that do not belong in the traditional systems, and, finally in the selection of its activities, it recognizes the hazards of modern life, and seeks approval for those forms that will combat deleterious influences, that will

²⁶ Jokl, E., Cluver, E. H., Goedvolk, C., and DeJongh, T. W. *Training and Efficiency*. South African Institute for Medical Research, Johannesburg, 1941.

supplement occupational deficiencies, and that will secure wholesome development

These are the two roads. One leads to slavery to work, to factory, to office, to desk chained to the oar of the business galley with the vain hope of buying happiness with the money that is earned, and with unwarranted emphasis upon special exercises to correct physical deficiencies. The other leads to play and recreation as a part of life, just as vital, just as worth-while as work that is needed to be done, and that all wish to do. It is for physical education to help say which road shall be travelled by man in the incomparable experiences of life. The gates are open. The highway is ahead.

Summary.—The discussion of this chapter may be summarized as follows.

1. There seems to be no doubt that man suffers today from a great many needless defects and diseases.

2. Primitive life is brutish, filthy, and also marked by defects and diseases.

3. The weakened state of man is due to the machines which he has created, these contribute to his physical, mental, and moral decadence.

4. Modern war destroys the best biological materials of a nation.

5. Intelligent national planning can rebuild the biological materials of man.

6. Defects in man called to military service are extensive. Many are readily preventable.

7. The defects in school children are largely preventable also.

8. The care of the unfit improves society unless hereditary disease and defect are permitted to propagate.

9. College students are probably one of the fittest groups in American life. College women today excel their mothers in many important biological items.

10. Longevity reflects heredity and environment. Proper nutrition may be a most important factor, as suggested by Sherman and his associates.

11. Rural youth called to military service show a higher rate of acceptance, both in 1917 and in 1940, than urban youth.

12. The prominence given to the biologic factors in the hazards

and shortages of modern life is not overdrawn. It would be, however, if we failed to keep in mind the whole man.

QUESTIONS

1 What agreement is there as regards the effects of modern industrial life on man? In what is there disagreement?

2 What points are cited to prove that the hazards and shortages of modern civilization adversely affect man?

3 What are the advantages of primitive life? The disadvantages?

4 What forces produce retrograde biological changes in man? What examples can you give of moral degeneration?

5 How can the degeneration of individuals be combated? What did Germany do in the years 1933-1939 to restore her national vitality?

6 What are the areas which give more evidence of biological weakness in American citizens?

7. Compare the rejections for national service in 1917 and 1940. What differences exist?

8 Why are young married men and young men with jobs likely to be more fit than unmarried and unemployed young men?

9 Do school children show many defects? Are many of these remediable? Why are they not corrected?

10. What is the argument that medical science and social service act to preserve the unfit? Is the argument sound? What forces in society should be used to attack the problem?

11 What is the situation regarding the defectiveness of university students? What favorable facts exist regarding height and dysmenorrhea among college women?

12 Is it reasonable to believe that women today are less enduring than earlier generations? What reasons do you give for your answer?

13 What are the facts about longevity?

14 What are the racial hazards of the insane and feeble-minded?

15 In an analysis of urban and rural groups, what factors in urban and in rural life favor biological values? What factors are unfavorable? What might be done to supplement the unfavorable? What is the responsibility of education in the matter?

16 Is the percentage of moderate defects in adults 20, 40, 60, 80, or 100?

17 Why are defects not the primary concern of physical education?

18 What are the obligations of physical education to the whole man? What is the meaning of the term the total situation, or whole problem?

19 What are the implications of the changing world for physical education?

REFERENCE READINGS

1 Diehl, H S and Shepard, C E The Health of College Students American Council on Education, Washington, D C, 1939

2 Dublin, L I Longevity in Retrospect and Prospect Williams and Wilkins Co, Baltimore, 1939

3 Holmes, S J Human Genetics and its Social Import McGraw-Hill Book Co, New York, 1936.

4 Nye, D New Bodies for Old Funk and Wagnalls Co, New York, 1936.

5 Paterson, D Physique and Intellect. D Appleton-Century Co, Inc., New York, 1930

6. Report of The Second National Conference on College Hygiene National Tuberculosis Association, New York, 1937.

7 Scheinfeld, A You and Heredity Frederick A Stokes Co., New York, 1939.

8 Thewlis, M W. The Care of the Aged C V Mosby Co, St. Louis, 1941.

9 Woods, R L America Reborn Longmans, Green and Co., New York, 1939, pp 3-28

THE NATURE OF MAN—HIS BIOLOGICAL FOUNDATIONS

"The impersonal wants, the cravings for truth, beauty, and justice, the zeal for competence in workmanship, and the spirit of goodwill toward men which are the highest objects of life for man seem far removed from his original proclivities. They *are* remote in the sense that the forces in their favor have to work diligently and ingeniously in order to make them even partial aims for even a minority of men. But, in a deeper sense, they reside within man himself, and, apart from supernatural aids, the forces in their favor are simply all the good in men"—Thorndike

"I love open air," said Professor Maturin, "but I hate what is usually called exercise."

"Naturally," replied the physician, "being a man of mind. The cult of muscle is ridiculous in intellectual people. Muscle and vitality are by no means the same, and you cannot do much for either through unnatural gymnastics. But I mean by exercise the maintenance of harmony between one's specialized functions and what may be called fundamental activity, so that the whole works together happily and spontaneously. Such a balance is as easy to preserve as it is important. We evolved as we are through a series of large general movements, and we need to continue enough of these to preserve a co-ordination that complements and supplements the particular functions that we most practice"—Furst

CHAPTER III

The Nature of Man—His Biological Foundations

Nature and Nurture.—It has been customary for a long time to regard nature and nurture as mutually antagonistic and exclusive factors which determined the behavior of individuals. The inheritance of traits and the effect of environment have provided the battle ground for long and heated arguments. With the advance of genetics as a science of inheritance, the exclusive character of one influence or the other has been seriously challenged and today, as Hogben¹ says,

“ no statement about a genetic difference has any specific meaning unless it includes or implies a specification of the environment in which it manifests itself in a particular manner ”

Long accustomed to authoritarian views about nature, modern man retains in his beliefs, customs, and speech notions about nature of an exceedingly bizarre character. These range from the doctrine of man's inherent evil nature to the concept that nature is always right. The study of genetics has afforded the basis for new interpretations of nature. The failures of man to build a good world are due neither to his inherent evilness nor to his slavish devotion to and following of nature. On the contrary, the present incapacity to utilize constructively the forces of the environment and his own potential powers forms the problem. Society, rapidly changing under the force of man's inventiveness, science, and escape from the rule of authority and tradition, must now face the problem of human behavior. Thus, the crucial tasks we confront in physical education as in medicine, education, and social life generally, are those of nurture rather than nature. We are learning slowly but surely that to get a better world to live in we must secure better

¹ Hogben, L. T. *Nature and Nurture*. W. W. Norton and Co., Inc., New York 1933

living in the world rather than attempt to secure a transformation of nature

There are, of course, many individuals with inheritable defects, and these incline us at times to expect reconstruction of society by means of reproductive controls. Such measures are important in particular cases but they have no general validity for all. We are confronted with the grim necessity of changing ourselves, devising new and better habits of life and escaping thereby from degenerating practices and beliefs. Our parents endow us with genes rather than characters and genes in no way determine the way in which we will use the organs and powers they provide. Strange as it may be, it is the science of genetics which has destroyed the notion of an all-powerful nature and has helped to substitute the double rôle of nature and nurture in human affairs.

This rejection of the idea that nature exerts an all-pervading influence in human life does not deny to nature a position of considerable importance. This influence, however, often relates to an earlier life of man. Man is still equipped by nature to live in an environment vastly different from the life that now is, as a result of science, art, reasoning, habit, language, tools, books, and various customs of his race. Hence, each new individual must unlearn much of his nature in order to live with others in the crowded, coordinated life of industrial society. By nature he cries from pain and fights for things he wants; he grabs and snatches from others. By nurture of particular kinds he learns to merit what he takes, and to earn or deserve the satisfaction of his wants.

The present understanding of nature rejects the notion that nature is always right or always wrong or half and half. It recognizes that the individual possesses drives, urges, and impulses to certain kinds of behavior and that these should be strengthened at times, weakened at times, and completely checked at times. Unless this is understood the nature of impulse may be improperly valued and the importance of wants and interests unduly praised. It is not an idle question in these days, when freedom and discipline are vital topics, to consider the views we hold regarding nature, freedom, and discipline.

Shall the individual be permitted to engage in all the activities he desires? Are his interests the only criteria for the selection of activities? If the answers to these questions are "No," does it fol-

low that the desires and interests of an individual are of no major importance? Such questions should lead the student to study the suitability of the natural equipment of man for certain types of motor skills, the force and usefulness of natural impulses to activity in his various enterprises, and the needs that exist today for shaping and directing these skills and impulses toward legitimate social ends. These data are found, of course, in the biological, psychological, and social foundations of human nature.

The Importance of the Facts of Nature—Many of the persistent problems in physical education today are clarified by reference to the facts of nature. For example, a program of physical education based upon natural motor movements which represent the racial motor activities of man, and a program based upon the artificial creations of "systems" of gymnastics are readily evaluated by reference to the facts of nature. Thus, the fact that man presents in the racial patterns of his nervous system certain underlying predispositions to function in well-defined motor activities characterized in type and quality by his motor experiences over thousands of years, that he is urged on by his very nature to exploit these established organizations, and that, under proper guidance, such expressions may be made to serve high causes and noble ends is of outstanding import.

It should be quite clear that this position does not require that the natural be always right. It admits that many natural tendencies in the use of the human body must be combated by directed physical education, its only requirement in such instances is that the materials or methods used avoid procedures that quantitatively or qualitatively ignore the nature of the human individual.²

The Influence of Nurture—Moreover, many activities today called natural are quite different from the original tendencies that they represent. The effects of nurture are present and the force of custom and tradition is very powerful.

The so-called *natural* proclivities of man represent enormous changes from original traits. Learning and nurture in its various forms are represented in the liking of boys for fishing, sport, and adventure since nature knows nothing of canoes, rods and reels,

² High jumping, swimming, and throwing are illustrations in modern performances of improvements on nature.

footballs, guns, and sport records. Nature's tendencies may go as far as to enjoy throwing a small object and swinging a club-like thing, but the majority of the sports of youth are modifications and adaptations of these early proclivities. Such modifications are natural activities in their basic patterns but all reflect the influence of nurture.

Further analysis of the natural in terms of its purpose is important. The original is the material we have with which to work. If left to itself it will not by nature result in values of real worth.³ The material is not by nature good, neither is it by nature bad, or evil. Original nature is the representation of the potentialities of the individual in need of direction, guidance, and experience which society seeks to give. This help, most often represented in the efforts of schools and colleges, should be of a kind that will be acceptable to society. For physical education the problem is so much clearer than for many other aspects of the educational process. The motor activities of man that are similar in type and quality to the movements that have been used by the race of men from early beginnings are the ones that today, by nature, provide satisfaction when employed, and discomfort when not. The importance of these original satisfiers and annoyers is well appreciated in the case of children. In adults, due to lack of opportunity in childhood for development of skills, or due to pressure of other interests in adult life, such as economic problems, absence of opportunity for these original forms may give discomfort. In fact, participation in any kind of motor activity for some adults may give discomfort.

The Permanence of the Physical Basis.—One of the stupendous facts of modern civilization is the magnitude of the social inheritance that man has accumulated and attempts to transmit through tools, language, arts, laws, science, experience, and knowledge in varied lines of endeavor. This social inheritance is civilization. Since the early decades of the nineteenth century this inheritance has increased chiefly in the direction of

³ Watson states that there is no real evidence of the inheritance of traits, that capacity, talent, mental constitution are not inheritable, but that the qualities which are characteristic of persons are trained into them, and what is often called instinct is largely habit. Watson, J. B. *Psychology from the Standpoint of a Behaviorist*, J. B. Lippincott Co., Philadelphia, 1924, Ch. VII.

sedentary activities and knowledge that makes, not for the employment of man's whole nature, but for exercise of his mental powers alone. The proposal has been made at times that the tendency and direction of evolution stimulated by the force of the social inheritance will produce increasingly a mental type of person so that as time goes on there will be less and less need for muscles.

Physical strength, endurance, power, will always be needed as a basis for the operation of the nervous system. But more than that, the inheritance of man includes drives and urges for play, for chasing and fleeing, for a great variety of activities. Given the physical opportunity in childhood these inner urges will take care of the developmental needs of man on a physical basis. If the opportunity is denied the results will be recorded increasingly in physical defects of development, lowered physical vitality, lessened power of observation and expression, stunted natures and stunted lives.

The Biological Basis of Life—To understand man's physical nature, it is essential to know the biological basis of man's life, and the way in which he attained unto the kind of being he is today. The simplest and lowest forms of animal life are the protozoa. These are single unicellular organisms and represent the units of structure in the human body. As life evolved higher forms we see at a higher level the group of animals called the coelenterata, examples of which are hydras, sea-anemones, jelly-fishes, and coral animals. They are so named because they are clearly distinguished by having a body cavity, which serves them as a digestive sac. Such tissues as nerve and muscle are not present, or very poorly developed, and the systems of circulation, respiration, and excretion are entirely absent, although the functions of these systems are carried on.

At a still higher level in the scale of development of the forms of life emerges the type illustrated by the lower flatworms. Here for the first time appears muscular tissue in significant amount. The muscles are arranged in circular and longitudinal fashion around the trunk of the worm and serve for locomotion.

The appearance of the muscular system increased the range of locomotor activity for the animals so endowed, it made possible a richer environment, but it required marked specialization of the body cells. In proportion as the muscle cell gained ability

to do specialized work it lost ability to care for all the processes that are required in living tissue. This specialization of certain cells required that other cells take up the work of supplying the muscle cells with food and of removing the waste occasioned by their activity. Thus it is that special cells appeared to furnish the food and oxygen needed by the muscles, and other special cells took unto themselves the work of removing the waste. This is the beginning of the circulatory and excretory systems.

The contraction of muscle is dependent upon a stimulus that will cause it to act. In development, muscle cells required the addition of corresponding nerve-fibers to the early type of nervous system. The increased power of locomotion brought the animal into new environment and new situations, and from now on through fishes, reptiles, lower mammals as the cat and dog, and arboreal mammals as the ape, up to man, the whole history of development is one of increase in complexity of structure and function of the nervous system. The brain, as the final and most complex structure to develop, presents an organ of wonderful usefulness to man. It exercises control over the other centers of the nervous system and hence over all the parts of the body. Part of this control goes on without the knowledge of its action on our part and irrespective of our will in the matter. It is impossible to make the heart stop beating by thinking or to make the liver secrete bile by reading about it. This control over the vital organs of life is automatic and involuntary, and although we know conditions that would modify the type of reaction that occurs we are limited greatly in an effort to guide the response. We have through the development of consciousness a certain power over the muscles of the body, and, in accordance with the way in which the organs of the body arose, we are able most effectively to reach their processes through the action of the skeletal muscles of the body.

This emphasis upon the importance of the muscular system has been expressed by many physiologists and biologists. They have phrased in clear and scientific language what the ancient Greeks knew. We need to remember always that the muscles are controlled by nerve centers and that the centers in control of the muscles of the trunk are older, tougher, and have more endurance than the centers governing the extremities. To strengthen these older centers is an act of prime importance because they are the

centers of that endurance which will enable us to withstand the strains of modern life. The toughness, endurance, and nervous poise of the individual who has experienced vigorous, physical activity in youth are in striking contrast to the high-strung, easily fatiguable, and weak children who are the product of a kind of living now widely practiced by our industrial, business, and professional classes.

Application of the Biological Facts in Development to Physical Education—The foregoing would seem to indicate quite clearly the need for modification of some physical education programs. It appears obvious that calisthenic lessons in the classroom will not provide the activity essential for the child's development. It is clear also that vigorous physical activity must be provided. Too much attention to safety may result in too little experience for boys in combat activities and in too many innocuous activities for both boys and girls. Individuals are sometimes stimulated to excessive effort in physical education, but in general it seems to be the fact that most young persons are not getting enough vigorous, physical experience.

It is a pertinent question to ask, can the school ever provide in its program of activities all that is needed by children for physical development? To answer this we need information concerning the time requirement. How many hours are essential? Hetherington has given one answer, based upon studies he made in a Demonstration Play School (Table IV).

This schedule by Hetherington⁴ would indicate that physical education has been assigned entirely too little time in school programs.

Burdick (Fig. 5) has shown that the time given by children in active games and play corresponds to the estimate by Hetherington and that children of elementary grades require from four to five hours a day of big muscle activity.⁵

In spite of the rapid extension of physical education into the school curriculum, it seems clear that the school can never provide

⁴ Hetherington, C. *American Physical Education Review*, May, 1917, p. 251. By "big muscle activities" Hetherington means "spontaneous and general locomotion, locomotion with toy machines, animals, etc., spontaneous or playful gymnastics games, dancing, aquatics."

⁵ Scham, M. *Why the Child Needs Play*, *Hygeia*, September, 1926.

in its schedule of the regular session for all that children require for developmental purposes. The meaning of this then is that children must secure this development outside of school. Such being the case, then, the school program of physical education must be essentially a teaching program in activities that will be used in after-school play. The school period must be an instruc-

TABLE IV
DISTRIBUTION OF ACTIVITIES BY AGE PERIODS

Age	Total average waking hours	Big muscle	Manual	Linguistic	Automatic	Doing nothing.
0-1						
1	9½					
2	10½					
3	11½		2		2	P—
4	12		2		2½	P
5	12½	4½	2½	2½	2½	P
6	12½	4½	2½	2½	2½	P
7	13	5	3½	2+	2½	P
8	13½	5½	3½	2½	2	P+
9	13½	6	3½	2+	2	P
10	14—	6	3½	2½	2+	P
11	14	5½	3½	2½	2	P
12	14+	5	4	3	2	P
13	14½	4½	4	2½	2½	P
14	15	4+	4½	3½	2½	P+
15	15½	4—	4½	4	2½	P
16	15½	3½	4½	4½	2½	P
17	16—	3+	4½	4½	3—	P
18	16	2½	5½	5—	3	P
19	16	2	5½	5	3	P
20	16	2	5½	5½	3	P

tion period to present play materials, to establish play standards, to foster play attitudes. To think of physical education in the public school as a corrective, disciplining day's order is to mistake the purpose of the period in relation to the developmental needs of boys and girls.

The Biped Position.—There were not only great advantages but also great disadvantages in the evolutionary changes that

brought animal life of the pre-man stage from the quadruped to the biped position. The liberation of the hands and their subsequent use, according to Sir Arthur Keith, developed the brain, but the disadvantages in other directions are no less real. Some of these have no particular meaning for physical education but the difficulty of balance is at once apparent. Many of the postural problems that man encounters arise out of the attempt to balance his weight in a dynamic system where the forces to destroy balance are ever present. In the quadruped the trunk weight hangs from the horizontal spine supported at either end, but in the biped it is directed through a vertical line to a narrow and rather unstable base. Todd clearly describes the changes that are brought about as follows:

Group I 5-10 year No. 100	Very active play and games	Reading	Perlor Games	Misc
Group II 11-12 yr No. 100	Very active play and games-outdoor sports	Reading	Perlor Games	Miscellaneous
Group III 13-14 yr No. 228	Active games and outdoor athletics	Sewing	Reading	Misc
Group IV 15-16 yr No. 180	Active games and outdoor athletics	Sewing	Reading	Dancing
Group V 17-21 yr No. 112	Active games and outdoor athletics	Sewing	Dancing	Misc

Fig. 5 — Study of the proportion of time that children give to recreational activities
(Public Athletic League of Baltimore, Md.)

"In the first position, the weight of the spinal girdle and of all the parts hanging upon it passes through the paired posterior facets on the articular processes of the vertebrae and rests upon the top of four shafts, the two humeri in front and the femora in the back. There is nowhere an accumulation of weight downward through a single axis, but instead side distribution through many short axes along the spine, with terminal distribution through the shoulder and pelvic girdles at either end. The lumbosacral connections of the posterior facets through which the weight passes from the spine to the pelvis are in alignment with the thigh-joints through which it passes from the pelvis to the femora. The supporting shafts of the femora are in alignment with the superior ramus, or upper branches of the pubis as they curve forward into the ilia.

"In the erect position the forward supports are removed so that all weight is supported by the legs, which now have a different

angle in relation to the spinal axis. The result is a change in the general direction of the weight-thrust throughout the structure, and in the particular parts of the vertebrae through which the weight passes. The facets, or articular surfaces, between the vertebrae being now in vertical alignment instead of horizontal, weight transfer is no longer directly through them, but the weight passes instead through the bodies of the vertebrae and the intervertebral discs.

"Next, we find that the direction of the weight-thrust from the spine to each leg is now oblique, from the lumbosacral joint forward to the heads of the femora. The springlike design of the legs is also changed, since the femora are now in discontinuous alignment with the spine, and the lower bones of the leg and ankle are much more nearly vertical in their direction."⁶

It should be clear that in the biped position the viscera have a tendency to descend, to press upon one another, to impair by malposition the functions of the vessels that reach them through the mesentery, and to impede by pressure the circulation of the pelvic basin.

Solution of the Biped Problem.—The problem presented by the biped position is not to be solved by attempting to go back to the quadruped position but by skillful adjustment of the organism to the forces which operate in the erect individual. Obviously a strong trunk musculature is essential in childhood and youth for the development of vital organs and nerve centers, it is essential, also, in all ages for the maintenance of the viscera in proper position. In addition to the development of the musculature, an economical balance of body weights in different segments is essential for efficient use of the biped position. Man must learn to carry himself on his legs, there is no other way.

Racial Physical Activities Analyzed.—An analysis of physical activities of the race would indicate the gulf between a natural primitive environment and present civilized conditions of life. Such an analysis in the anthropoid stage must necessarily be speculative. The physical activities of primitive men were mainly hunting, with some use of the arms in drawing and manual tasks. It is likely that ground activities predominated rather than arboreal, so that running, jumping, lifting, carrying, and throwing

⁶ Todd, M. E. *The Thinking Body*, Paul B. Hoeber, Inc., New York, 1937, p. 69.

are probably nearer modern man than climbing and hanging.⁷ Swimming was not natural even then, and is learned now with difficulty. The activities of man in the earliest periods probably determined, and defined, the lines of his motor evolution, his activities since then up to modern times have set that tendency.

The evidence either shows or suggests that running, jumping, throwing, climbing, and hanging formed the basic patterns of

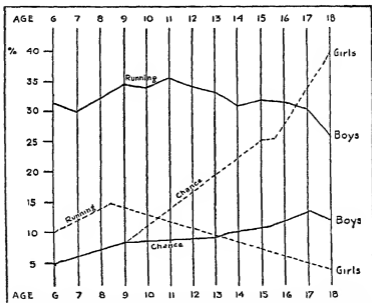


Fig 6—Preferences for running activities and games of chance shown by age and sex (From O'Shea, *The Child, His Nature and His Needs*)

motor movements throughout the life of man. As he passed from primitive to nomadic, to pastoral, to agricultural, to industrial life, he clung constantly to certain movements. These, therefore, are truly as much a part of his inheritance in function as are anatomical formations in structure, indeed, the persistence of these

⁷ Wells, H. G. *The Outline of History*, vol. 1, pp. 65-67, 75-85, 104-121. The Macmillan Co., New York, 1921.

fundamental movements through the ages is dependent in part upon the conformation of his anatomy His fundamental movements are truly racial

The development of his play, his games and sports, his dances and festivals are only elaborations of these immemorial racial activities The highly organized motor activities of today are to be analyzed in terms of these racial types Baseball is running and throwing, football is running, throwing, jumping, lifting and carrying, and basketball is running and throwing Some activities

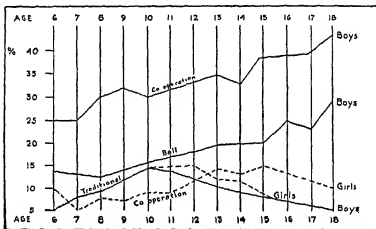


Fig 7—Preferences for ball and traditional activities and cooperative forms shown by age and sex (From O'Shea, *The Child, His Nature and His Needs*)

involve special technique, but depend for their attractiveness upon the basic relationship of these racial types

McGee and Cioswell report upon the play activities of children and Figs 6, 7, and 8 indicate age and sex preferences and the type of activity

Now physical education must consider seriously if it is wise to foster a program of physical education organized upon a basis other than this racial one By what process of reasoning can it be justified? For developmental purposes it would appear that the children of man should engage in activities similar in type and

quality to those immemorial racial forms which served so powerfully to fashion the frame and motor structure of man

Further Facts in Development—In addition to the biological outline presented above there are other pertinent facts to consider. The skeleton of man varies greatly at different age levels

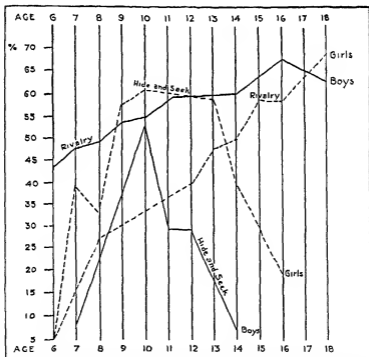


Fig 8—Preferences for hide and seek, and activities of rivalry shown by age and sex (From O'Shea, *The Child, His Nature and His Needs*)

Preformed in cartilage it subsequently changes to bone, but this process is gradual and is incomplete until about the twenty-fifth year

General Differences between Infant's and Adult's Skeleton—The skeleton of the infant shows a large proportion of cartilage and

fibrous tissues This fact explains the comparative softness of bone in the infant In Fig 9, the skeletons of the newborn child, the

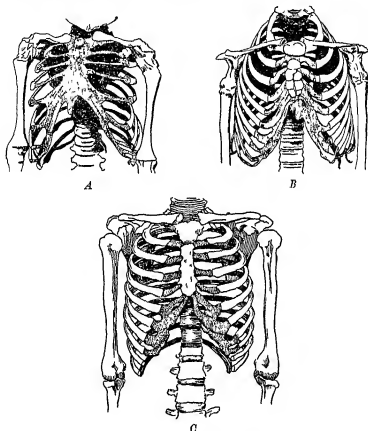


Fig 9—Ribs and sternum, to show the progressive ossification of the cartilage, which is indicated by stippling *A*, Child at birth, reduced from life size *B*, Child at seven years, much reduced *C*, Adult, thirty years, very much reduced, from life From specimens in the Warren Museum of the Harvard Medical School (From Minot)

child of seven years, and the adult of thirty are compared The soft bones of the young child are readily subject to postural de-

formity and injury Physical education should seek to protect the young child from inactive school programs which result in the "school room stoop," and provide competent supervision for vigorous play

In the infant the thorax is round, in the adult it is an ellipse After the second year of life the thorax increases in diameter very much faster than the head The child needs much free play and running about so that the chest will develop in relation to respiratory need created by activity

The greater transverse diameter of the thorax is indicated by the following proportions At birth the anteroposterior diameter is to the transverse as 1 is to 1.5, at three years it is as 1 to 2, and in the adult it is as 1 to 3 In both infant and adult, it will be noted that the skeleton is formed of separate bones held together by bands of white connective tissue called ligaments, forming joints or articulations In children the joints are more flexible than in adults Range of movement tends to decrease with age This difference is partly ligamentous, it is also due to the obstruction of joint movement by contiguous parts The relatively large joints of children are to be contrasted with the relatively large, soft parts in adults

Differences in the Spine of Child and Adult—At birth the child's spine is very flexible It can be twisted in nearly every direction This is due to the cartilaginous character of the vertebrae, which begin to ossify in the third year of life, and the softness of the ligaments and muscles surrounding the parts The relative and absolute lengths of the cervical, thoracic, and lumbar segments vary From infancy to adult life there is a relatively greater growth in the lumbar region than in either the cervical or thoracic, in fact the latter two regions show a relatively greater length in infancy than in adult life This transformation and greater mobility of the lumbar spine are highly suggestive of the need for integration of this region in all developmental activities Such integration is achieved when the child learns to do a forward roll—as a ball with all parts, arms and legs—united as a whole in the act Similar illustrations are to be found in broad jump, climbing a ladder, and throwing a ball

The Arch of the Child's Foot—The sole of the infant's foot does not appear to have an arch, but this deficiency is only apparent

and not real because the sole of the infant's foot is heavily padded with fat which obscures the arch that is so evident about the third and fourth years. Accurate measurements show that infant's feet are arched in the same way that the feet of adults are, and further that proportionately the arch in infants is about as high as in the adult. Attention to how the foot is used should be given as soon as the child can understand.

Sex Differences—The pelvis of the female is much broader after adolescence, which gives to the femur a marked obliquity. This mechanical disadvantage interferes with the running ability of the girl. In all movements of the lower extremities there is likely to be a marked lateral sway of the pelvis, the extent of this oscillation determines the speed of the individual in getting over the ground. Because of this one fact of body construction, the girl is unable to run so fast or so far as the boy of the same strength. The measurements of the male and female pelvises are given in Table V.

TABLE V
PELVIC MEASUREMENTS

Diameter	Male.			Female.		
	Inlet, cm	Interme- diate, cm	Outlet, cm	Inlet, cm	Interme- diate, cm	Outlet, cm
Anteroposterior	10 25	11 5	8 52	10 25	12 75	11 5
Transverse	12 75	12 0	9 00	13 25	12 75	12 0
Oblique	12 00	11 5	10 25	12 75	13 25	11 5

While there are anatomical and functional differences in the sexes, there is no evidence that, apart from training, the nervous system of the girl is different from that of the boy. In the measurements that have been made of instinctive, emotional, temperamental, and moral traits no significant differences have been found. With greater physical strength the male exhibits a pugnacity of spirit, and this doubtless explains the common notion that the male and female are different nervously. The average man has a strength grip of 81 pounds, the average woman 48 pounds. Women

do not use their muscles so rapidly as men. Reaction time is longer. Tucker found that the average man took $79/100$ of a second to apply the brakes of an automobile after seeing the "stop" signal. The average woman takes $87/100$ of a second.

It should be quite clear, however, that the profound changes in the pelvis require modification of the program in physical education for girls. What has been used with boys will not suffice for girls after the onset of puberty. Complete development of the pelvis in women does not occur until "well into the twenties," and this prolonged period of developmental change from twelve years to twenty-five suggests that girls be taught activities that will not make extreme muscular pull upon the pelvic region. This is of significance for maternity.

The emphasis upon competitive excellence in track and field that flows from the Olympic games and the tendency to select for professional preparation women of masculine type give an improper direction to physical education of girls and women. Skerlj reports upon the admission standards for women to the Warsaw Central Institute of Physical Education and observes that the tests used led to the selection of candidates, 79.95 per cent of whom had undeveloped breasts, 60 per cent had flat and narrow pelvis, and 65.8 per cent were leptosomatic (tall, thin, long, flat thoracic cavity). Obviously types of physical education suited to the masculine type of girl are wholly unsuited to the feminine physique.

Growth and Development—Technically, growth of an individual means increase in mass. It represents an accumulation of tissue. Development is the organization of that tissue into functional units or powers. Development of the child can be judged in part by growth, but growth may occur without a corresponding development. Nutrition and various hygienic factors condition growth and development. While physical education influences growth, its chief interest is in development. The chest measurement has been used frequently as an index of development.

Factors Influencing Growth—From the beginning growth of the fertilized ovum until maturity of the individual is reached numerous forces determine growth. Some organs continue to grow even in old age. Heredity is a prominent factor. Certain races are small and never grow large individuals. In the same race, environment may operate, or the blood strains may explain differences. The

small stature of the Southern Chinese and the tallness of the Northern Chinese are interesting phenomena in one race. The agencies producing this variation may be climate, or what is more probable, strains from the North of China in the one case and strains from India for the Southern Chinese.

Environment has a pronounced influence, in which adequate diet, sunshine, care of the growing child, adequate rest and play, comprise the conspicuous items. Children exposed to a superior environment are taller and heavier, have greater lung capacity and lower blood pressure than the average for their age. The influence of nutrition upon growth in size is particularly prominent.

It is a commonly held idea that children show alternate periods of growth and nongrowth. It is believed that children grow tall in the summer and heavy in the winter. It is known, however, that infants grow regularly if the food is proper and there is no illness. It is probably acute illness, or other unfavorable factor, such as sedentary schooling, that causes the interruption to normal and constant gains in height and weight. Epidemic communicable disease in a school invariably interferes with growth, and serious disease in infancy not only checks growth at the time but acts as a future deterrent.

Important causes of growth disturbances are disease, food deficiencies, endocrine dysfunction, climate, lack of exercise, and various environmental hazards. In failure of development, lack of physical activity may be the prominent cause, especially in muscle, bone, and organic viscera.

Chronological, Anatomical, and Physiological Age.—The age in years, months, and days of a child may not compare with the age of his development. Anatomical or physiological items in the individual may run ahead or lag behind in development for the normal age.

The ossification of bones indicates anatomical age. This may be determined by the x-ray.

Physiological age represents a functional condition and in relation to chronological age may present marked variations. Physiological maturity represented in sexual development may range over a period of four to five years. Maturity may come at ten and one-half years or not until sixteen and one-half years. The median age for this development is between thirteen and one-half and fourteen

years Early maturity is not a sign of poor health Tall girls mature generally earlier than short ones

Physiological age has significance for physical education Children tend to play with others of their same physiological age and they select activities suited to their stage of development Girls are older physiologically than boys

Physique—Good physique is attained often as the result of exercise whether it comes as a by-product of life activities or from directed forms of education Doubtless there are important influences in heredity, but the experience of Theodore Roosevelt in building up his physique is too well known for us to forget that developmental activity out of doors is the chief agent

Body types are usually classified in three categories

1 The *asthenic* These are tall and slender persons with flat chests and sloping shoulders Functionally they are likely to have great difficulty in digesting food due to their relaxed viscera They have little energy

2 The *pyknic* These are short and thick-set persons with strong necks, barrel-shaped chests, and protruding abdomens Functionally they enjoy food, eat large amounts, and digest it easily They are likely to have abundant energy

3 The *athletic*. These persons are intermediate between the other two They are average in size, possess a strong musculature, have broad chests and large hands and feet

These body types are the result of both environmental and hereditary factors Exercise can accomplish more with the athletic type than it can with the asthenic or pyknic

The intermediate group is the largest of the three types although it should be remembered that there are many individuals between types one and three, and types two and three

Certain types of people tend to select certain activities The asthenic individual will not play football, he may play tennis The pyknic will not attempt the sprints but is likely to choose field events This is desirable and usually salutary The athletic type well suited for football may devote himself to that sport alone and limit his physical education

In addition to these body types which are seen in both sexes, there are sex variations due to the presence or absence of male or female characteristics The typical male is broad shouldered with

narrow hips and straight legs, but some males may show distinctly feminine body features of sloping shoulders, breasts, broad hips, and slanting thighs

Masculine women athletes too often set, for the lay public and for uncritical professional workers as well, a standard of performance for women that is unreasonable and unsound. It is to be expected that with better classification of types and with more knowledge of results of participation, substantial guidance can and will be given in relating activities to physique.

The Role of Anatomy and Physiology in Physical Education.—It is generally assumed by the physical educator that anatomy and physiology are essential studies for the student of this area of education. This rests upon the general acceptance that a worker should know the materials with which he works. There are values in appreciation and understanding which flow from such knowledge, but beyond these are the many procedures which must be referred always to the structure and function of the human organism for a final check. Practice based upon knowledge is clearly superior to practice based upon tradition, even if the tradition is obviously a popular one.

The Foot and Its Uses —The transverse and longitudinal arches of the foot are formed by the bones of the tarsus and metatarsus. They are maintained by ligaments and muscles. These arches carry the weight of the individual and react to the forces of weight and of use that operate. Use of the foot affects its form; in a remarkable degree the fusion of function and structure can be observed here.

In determination of the use of the foot, consideration should be given to the whole organism. It is not enough to consider the foot alone, important as that is. There appear, therefore, certain facts that may be examined.

In the foot, structure is more favorable for supporting the body weight on the lateral rather than the mesial aspect, the longitudinal arch is high on the mesial side; and the tendons of the ankle extensors pass to the toes and sole of the foot on the mesial aspect of the ankle joint. When the foot is placed straight forward, the superimposed weight may be transmitted from heel to toe over the lateral aspect of the foot and the longitudinal arch correspondingly protected. When the foot is turned outward the weight

in passing from heel toward the front part of the foot breaks over the mesial border, tending to impair the structure of the longitudinal arch

When the whole mechanism is considered, the relation of the foot position to hip joint, pelvis, lumbar and thoracic curves, chest and head is important. When the feet are turned outward, the pull through the iliofemoral and ischiofemoral ligaments tilts the pelvis forward, increases the lumbar curve, and alters the position of the chest and head. Thus the foot position is to be viewed not only in relation to the structure of the part itself, but also with respect to the entire correlated mechanism.

Tradition, authority or style may establish a certain foot position. Exact and adequate knowledge should determine this matter.

Abdominal Viscera and Trunk Musculature—The abdominal viscera are held in position against the pull of gravity by the floor of the pelvis, the muscles of the lower torso, and delicate bands of mesentery. Obviously the pelvic floor, a sloping shelf of no great size, plays a minor role here, and the mesentery is too fragile a structure to give much support. The responsibility for abdominal position of organs rests largely upon the musculature of the walls.

Since visceral ptosis impends in sedentary and weak persons, emphasis upon programs that *develop and maintain* abdominal muscle strength seems essential.

The Heart and Circulation.—Very significant items for physical education are revealed in a study of the developmental changes in heart and circulation.

Shape and Size of the Heart—The heart is somewhat conical in shape with the apex pointing downward and to the left. It varies in size with age, sex, and physical work.⁸ At birth the infant's heart in relation to the body weight is relatively heavier than the adult's. Table VI of heart sizes indicates the variations for age and sex.

Functional Defects of Heart—One of the remarkable changes taking place during adolescence is the elaboration of the circulatory system to meet the new demands to be made upon it. This

⁸ Contrary to common beliefs, studies made of the hearts of long distance runners do not always show increase in size. *American Journal of the Medical Sciences*, March, 1929, p. 394.

adjustment is not always immediately successful and in certain individuals there are cardiac disturbances. There may be simple disturbances in rate or more severe ones, marked by distinct murmurs and alteration of the heart sounds. Under careful supervision, these individuals recover from the temporary embarrassment of the circulation, but competitive contests are not to be permitted during this period of adjustment. In a recent study by Karpovich,⁹ certain old views about the heart have been seriously challenged. Among his conclusions are the following: (1) contrary to an established notion, there is no discrepancy between the development of the heart and the cross section of the largest arteries; (2) the heart volume and the cross section areas of the aorta and the pulmonary artery show a close proportionality.

TABLE VI
SIZE OF HEART AT DIFFERENT AGES

Age	Length in cm		Breadth in cm		Thickness in cm	
	Boys	Girls	Boys	Girls	Boys	Girls
1-4 years*	5.14	5.1	0.09	5.84	2.44	2.28
5-9 years*	7.04	6.0	7.44	6.54	2.80	2.55
10-15 years*	7.67	6.63	8.35	7.04	3.16	2.80
Adult†	12 to 15		9 to 11		5 to 8	
Adult‡	12.5		8.7		6.2	

¹ Compiled from figures by Feldman,* Piersol,† and Gray‡. Adult figures do not indicate sex.

The Athletic Heart—The notion that athletic participation produces an enlargement of the heart which is injurious to health is very widespread. In recent years, however, a new view of the heart holds that such a conclusion is wrong.

Hearts of persons engaging in strenuous sports or hard physical work will enlarge in response to the effort made in order to maintain an active circulation. This enlargement of the heart corresponds to the enlargement of other muscles when actively exercised.

⁹ Karpovich, P. V. *Textbook Fallacies Regarding the Development of the Child's Heart*, *Research Quarterly*, October, 1937.

cised. Exercise also increases the tone of the heart muscle, so that strength and firmness result rather than mere increase of bulk.

When, however, the heart is used vigorously during periods of infection—often not recognized—then there may be injury which accounts doubtless for the observations made about exercise and heart injury. In all instances of infection, the individual should remain at rest.

Norms for Amplitude and Voluntary Movement.—The normal range of voluntary movement in the different joints of the body was of very great importance in the treatment of soldiers of the first World War. The measurements of the following norms, offered by Gilliland, were made by the use of metrotherapy apparatus¹⁰. The subjects selected were male college students. The range for women, children, or old persons would probably be different. It would be reasonable to accept as normal any amplitude above the lowest range given in Table VII. Reference to these norms may be made in any study which seeks to determine the amount of flexibility which exists in various joints. Rather than assuming that people need more flexibility and constructing a program with this objective uppermost, the soundness of the objective can be determined by collection of the facts.

Respiration.—The first act of the child at birth is an inspiratory one. Breathing takes place by the operation of a competent mechanism. During infancy and early childhood the respiration of the child goes on without disturbance, but on entering school it has been the custom for certain exponents of physical education to assume that the child did not know how to breathe properly, or was in need of oxygen, or for these or other reasons there was the necessity to teach the child some breathing exercises. This practice is purely traditional and comes with all the other unacceptable procedures from the so-called "systems" of gymnastics. It is important to examine some of the physiology involved in respiration in order to determine intelligent procedure.

1. *The respiratory mechanism easily provides sufficient oxygen from ordinary air for the body needs.* The interchange of oxygen and carbon dioxide in the lungs takes place through the alveolar membrane of the lungs. This area is so large that an enormous margin of safety exists. For example, the alveolar absorption area is over

¹⁰ Described in the *Journal American Medical Association*, October 9, 1929, p. 988.

TABLE VII
NORMS IN DEGREES

Joint movement	Average amplitude	Average deviation *	Range
Shoulder			
Flexion-extension	201 0	9 1	228-282
Abduction-adduction	207 5	6 6	180-222
Elbow			
Flexion-extension	152 3	6 0	135-173
Wrist			
Flexion-extension	166 0	6 5	147-183
Abduction-adduction	96 5	10 3	68-132
Finger			
Flexion-extension, carpophalangeal			
2 (index)	96 0	9 0	70-127
3	80 0	9 0	52-105
4	77 5	8 0	50-130
5	98 5	9 5	67-130
Mesophalangeal			
2 (index)	134 5	9 5	102-105
3	136 0	8 5	110-161
4	191 5	9 5	90-101
5	118 5	12 5	82-152
Distal			
2 (index)	108 5	10 5	77-155
3	104 5	10 0	70-140
4	91 5	11 5	55-125
5	95 5	12 5	46-137
Hip			
Flexion-extension	120 0	11 4	85-162
Abduction	54 5	7 1	35-80
Knee			
Flexion-extension	133 0	7 5	110-155
Ankle			
Flexion-extension	53 0	4 0	41-66

* The range above and below the average which includes approximately half of the cases

twenty times the area required in normal breathing. It is not always appreciated that we use only about 25 per cent of all the oxygen we take into the lungs. People are greatly interested in getting oxygen and believe that the lungs need enlargement for this purpose, but the lungs are normally more than adequate. To enlarge the lungs more is, in a physiological sense, like carrying coals to Newcastle.

2 *Is the amount of oxygen used by the tissues conditioned by the needs of the cells, or by the supply of oxygen?*

The above discussion answers this question in part, but there is additional evidence to prove that the needs of the cells at any one time determine the combustion of oxygen that will take place.

This point was settled by the German physiologist, Pflüger, and elaborated more fully by the English physiologist, Barcroft. It has been demonstrated that the cell takes up oxygen only in relation to its needs. It takes up only what it can use, and rejects the rest.

The evidence is clear that breathing exercises are of no value in relation to getting oxygen to the body cells at times other than those moments when there is a demand from the organs for this particular gas. The evidence supports the contention that the circulation meets the need created by the increased activity of the cells. It is a common observation that both circulatory and respiratory systems respond to the emergency by speeding up their functions. That these changes are subsequent to activity, that in no instance do they precede it, are data of importance for those who are concerned with the initiation and direction of programs of physical education.

3 *Breathing exercises disturb the normal balance of the chemical elements of the blood and artificially throw out of harmony a relationship which the organism tends to maintain at all times.*

The facts show that breathing exercises disturb the normal balance of acid and base elements of the blood. If forced breathing occurs, as in breathing exercises, carbon dioxide normally present in the blood can be decreased in amount. Afterwards the rate and depth of respirations decrease because the lack of carbon dioxide is also a lack of stimulus to the respiratory center. When the breathing exercises are stopped, the carbon dioxide accumulates in the blood until it is normal again, at which time the respirations return to normal.

It is easy enough to give breathing exercises to a person, but it is a futile and senseless thing to do unless actual demand for oxygen exists. If the demand occurs, the respiratory center is prepared to adjust the respirations in accordance with cellular needs.

In instances of chest defect, breathing exercises may be used to correct certain depressed conditions. It would appear then that, except for corrective purposes in defective cases, breathing exercises are unscientific, and probably harmful.

Reciprocal Innervation.—We are indebted to Sherrington for the clear facts regarding reciprocal innervation. When impulses are sent to a group of muscles to produce action, at the same time other impulses go to the antagonists to inhibit their action. Thus, when a nerve impulse passes to the biceps causing it to contract, at the same time an impulse passes to the triceps causing it to relax. The result is a smooth and harmonious movement. This is normal, this is physiological. It is called reciprocal innervation.

Now the use of exercises at times is made to violate this very clear fact. So-called "resistive exercises" are advocated in certain "systems" and in so-called "educational exercises," the individual is asked to hold the active and antagonistic muscle groups in a state of contraction. Thus, these movements are stiff, rigid, and hence unphysiological.

A direct application of this principle is seen in the learning of new movements. In skating, for example, the beginner holds himself stiff, due to the fear of falling and some doubt concerning his own ability to execute the movement. This stiffness, awkwardness, or lack of what is commonly called grace, is due to the fact that he is contracting antagonistic muscle groups, that he is inhibiting normal inhibitory impulses. The awkwardness of many gymnasts in general is due to large muscle masses in part, also to the kind of movements they have been practicing. The value of relaxation of muscle groups in golf, tennis, and other athletic performances, attested to by experts, is practical evidence in support of the argument made.

Relaxation, a Normal Condition.—In this connection, the full application of Sherrington's contribution to movement should be stated. Contrary to popular notions which emphasize tense muscles, and contrary to popular words which praise the "go-getter"

type of attitude which so frequently provokes tension, the normal physiological state is one of relaxation. This normal condition will depend upon the operation of numerous factors, such as balancing of body weights and avoidance of psychological tension which is reflected readily in hypertonus of muscle.

The notion that it is good to relax arises out of a false concept of what is normal and desirable. The relaxed state is the normal, the tense condition is the abnormal. Relaxation should not be interpreted as slumping with respect to postures, nor as lack of tone with respect to muscles.

Fundamental to Accessory.—The common notion regarding the use of big muscle activities rests on belief in the widely accepted theory that development takes place from the fundamental to the accessory muscles. This theory may be interpreted to mean that the larger, older, and central muscles and nerve centers play a major part in the voluntary control of muscles and should be developed before the accessory ones are brought into play.

The meaning of this theory for physical education is of course to emphasize the use of the large muscles of the body rather than the small ones, but this might conceivably be entertained if based only on the physiological returns from the activity. It emphasizes also the use of free, spontaneous movements before the voluntary. This will involve the fundamental before the accessory.

It would appear that in addition to the physiological aspects of the matter, the use of the trunk or fundamental muscles should precede that of the extremities, and be developed in early years prior to any emphasis on training of extremities, because of the significance of trunk control in motor movements and the order of use in those acts involving the entire neuromuscular mechanism. Thus, in dancing, it is important not to dance only with the arms and legs but to use the trunk as the center of expression, in throwing, the torso is the major agent and the arms and legs complete the act, in golf, the trunk and arms synchronize but the control is largely in the torso, and in many other acts it is the trunk muscles and mechanism that hold the center of attention and control. From these considerations, then, physical education should interpret fundamental to accessory in terms of physiological and developmental values, and also in the light of certain kinesiological explanations.

Developmental Hazards—What the child becomes is a product of two forces his hereditary equipment plus his environmental surroundings. It would be clarifying to list developmental hazards under these two headings, but the influences are too mixed to permit of such simplification. Where one influence is especially marked or of unusual character, it will be indicated.

Infancy and the Pre-school Child—The early years of the child are given to pure growth. Gain in motor power and function is rapid and mass increases sharply. The child runs certain hazards of the communicable diseases which may cause death, leave serious complications, or be relatively without significance. The death rate from such causes varies in different countries and in sections of any one country.

The child in this period is weak in self-control and nervous stability. Even allowing for the correction to be made in adult standards of judgment, it still remains that one of the serious hazards of development is the unstable nervous system. It is unwise to stimulate the child beyond the limits of his own free-play situation.

The instability of the nervous system which gives rise to neuroses, while more marked in children than in adults, is not to be regarded as characteristic of all children. Individual instability represents a hazard of development. Medical and educational help should be brought to bear upon such cases long before the child goes to school, and should be continued as needed in the years of school life. The neurotic child unguided is the forerunner of the adult neurasthenic.

During the second half of the first six years the death rate is decreasing and hazards of childhood are somewhat lessening. There still remain serious developmental chances to acquire disease or defect and hereditary deficiency may betray itself in the latter part of this period. Anemia, rickets, lack of energy, and skeletal defect are the outstanding dangers. The proper guidance and treatment for rickets is, of course, medical. It will consist of direct sunshine, cod liver oil, and diet. These children need the gentle stimulus of outdoor play.

The skeletal defects are mainly of the spine and feet. Some orthopedists regard all simple and at times called functional deviations of the spine as the end-result of previous and unrecognized

cases of anterior poliomyelitis. There is practically no scientific proof for this interpretation, but it should be kept in mind as a possibility when school sanitarians are inclined to place upon school seating, clothes, and habitual postures the onus for these lateral deviations of the spine. Within wide limits variations of the spine may be considered normal.

The importance of the defects of the feet is not to be overlooked in the enthusiasm for the more dramatic and apparently more serious deficiencies. Observation of the use made of the foot will reveal before entering school that there may be need for a lift of one heel, or a wedge on the inner aspect of the sole and heel to throw the weight to the other side. Kindergarten children should be carefully examined to determine these facts of use, and early correctional measures instituted. Candidates for army life, for industry, for insurance are examined at entrance, but children entering school are not subjected to a careful psychomedical examination. The child entering school may be normal and ready for education, he may be handicapped and in need of special medical attention or educational adjustment. An adequate examination alone can determine this.

To determine the cases and their degree of defect is essential to right placement for school work and to their follow-up with appropriate treatment. For this work a school health service, comprising health examination and supervision, a psychological examination, and an educational analysis and placement are needed.

During this pre-school period, the child is normally impelled to movement and activity. Care should be taken to prevent custom interfering with this normal impulse and expression. Free games, a suitable diet, outdoor air, sunlight, and adequate rest are the essentials for normal development. For the normal child, given these essentials, no artificial method of exercise is required.

The Child from Six to Ten Years of Age—The child in this period is rapidly gaining in strength, but it must be remembered that he still retains his infant characters. The heart is still small. Its weight is about one third of its adult weight, and yet it has to pump blood to a body that has two thirds of its adult weight. There is at the same time a great increase in the desire for physical activity and this, too, makes great demands on the heart. For

these reasons there is imperative necessity that his activity be carefully guided and that undue demands in the form of vigorous competitive contests be avoided. Simple team games may be used but kept free from the stimulation to unusual activity occasioned by championship or other social pressures from a group. Some authorities call the later years of this period the fatigue years and they may well be so regarded because of the slow development of the heart.

This fact should point to the great need for out-of-door life and the right kind of food. So far as the program of physical education is concerned, here again the emphasis from scientific fact is on the out-of-door type of program rather than the traditional one of the school room. For the proper development of the child he cannot be out-of-doors too much. The emphasis in this period should be to secure normal growth.

The demands of sedentary school work are probably the most serious handicap to normal growth and development in this period. Fatigue is a serious problem expressing itself in "mobility automatism and dispersed and disordered movements." Studies of elementary children's weekly hours in class-work in different countries show a range from the low of fifteen hours in Switzerland to the high of thirty-nine in Egypt. In the United States, the hour is twenty-five to thirty. It is evident that a radical reorganization of the American school day is necessary before conditions for normal growth and development of all children can be established. Home work should be abolished for this age, diets must be improved, more outdoor life must be attained, and motor activity must be increased.

The Child from Ten to Fourteen Years of Age—This period is not sharply defined and especially for the sexes there must be a certain latitude given in classification. Thus we may well include here the girls from nine to fourteen and the boys from ten to fifteen.

The child during this period is growing rapidly. This acceleration produces a marked increase of mass before the extensive developmental changes of adolescence. Heart irregularities are common but these usually resolve into regular action. Curvature of the spine is frequent, strength is not yet developed, and supervision is at all times important.

The Adolescent—Puberty and adolescence make great changes in boys and girls. In boys the physical changes cover the years from fourteen to seventeen, in girls from twelve to fifteen. But there are psychological changes also which last four years longer. Individuals vary in this process of maturation. Before adolescence girls grow faster than boys. During adolescence, boys catch up with girls and then grow faster and over a longer period. During this period athletic contests are suitable activities but they should occur in a natural social situation. Artificial stimulation by means of championships and record breaking should be avoided. These increase the competitive effort and under eighteen years, serious competitive effort is unwise. The rapid increase in weight, height, and size of internal organs demands high metabolic activity and generous supply of energy. Depletion of this by excessive activity is undesirable.

Work in school and elsewhere needs to be controlled with respect to other values. Rest, play, and recreation are essential. Holidays are not only social, they are also biologic in effect.

Summary—1 The natural is the material with which we must work. It is not necessarily perfect or right. Natural movements represent the source from which we may select the activities that are likely to be more useful to man because of their identity with the things man has done since time immemorial.

2 The early appearance of the muscular system suggests that vitality is to be secured in part through development of the vital organs in relation to the musculature that historically occasioned the appearance of the vital organs as systems in the body.

3 Methods of exercise which rely upon arm and leg movements mainly are not at all valuable for organic development.

4 The individual must learn to use his biped position without loss of muscular power or disturbance of organic viscera.

5 The racial activities of man should comprise a major part of all programs.

6 The cartilaginous character of the infant's and child's skeleton emphasizes the need for properly directed activities, wise distribution of muscle effort, and attention to postural attitudes.

7 The chemistry and histology of children's bones indicate the rapidity of metabolism in contrast with adult bone and point to youth as the period for structural changes and adaptations.

8 The norms for thoracic circumferences indicate the need to pay attention in examination and in activities to natural development and not to seek adult forms during the period of youth

9 The flexible character of the child's spine suggests the danger inherent in an easily movable structure, the tendencies toward spinal curves, the need for strengthening of the back by development of the psoas and lumbar muscles

10 Sex differences in the skeleton emphasize the fundamental distinctions to be drawn between activities for boys and girls, on the ground, and in hanging activities In the water women are not handicapped by broad pelvis but have an advantage over men due to a lower specific gravity

11. The fundamental sex differences in physical strength suggest that boys and girls after puberty should not compete against the opposite sex, that for girls contests should be largely skill rather than strength tests.

12. Physiological age is the functional age of a child in determining participation in physical education.

13. Good physique depends upon many factors of heredity and environment Exercise is always an important factor

14. The anatomy of the human foot should determine the form to be taught in various stances and movements.

15 The norms for movements in joints give a basis for selection of stunt activities as well as serving as guides in corrective gymnastics

16 The facts in development of the heart and circulatory channels indicate the need for careful supervision of activities during developmental periods, and the importance of avoiding undue strains during periods of adjustment.

17 The information on respiration points to the prime necessity of avoiding respiratory exercises for lung development, oxygen intake, or similar reasons They may be used for corrective purposes Respiratory development should follow activity and be related to activity

18 The facts of reciprocal innervation and other physiological data prove the error of many "systems" of gymnastics which use resistive exercises

19 The practical efficiency in athletic performance that results from relaxation of appropriate muscle groups indicates the harm

done to excellent performance by stiff, rigid movements. Certain types of gymnastics are poor preparatory exercises for excellence in swimming, golf, tennis, baseball, and other sports.

20 Development of the fundamental muscles and nerve centers of the trunk should not be neglected.

21 The instability in some children and the enormous strain thrown upon the nervous systems of all children by developmental changes show the need for individualization in the supervision of activities and careful selection of activities in relation to capacity and stages of development. This is in recognition of individual differences.

22 Physical education must be alert to pick out and refer children in need of special help in the overcoming of growth and developmental handicaps.

23 Competitive contests should be controlled with reference to the child's needs, developmental hazards, and other criteria of growth, rather than by commercial exhibitions or curricular considerations.

QUESTIONS

1 What distinction do you make between definitions of nature and nurture?

2 Is nature always right? How should your view of this influence physical education?

3 How are problems of physical education clarified by referring them to the facts of nature?

4 What is the basis for believing that man's biological nature is permanent?

5 In the biological development of living forms, what relation has the muscular system to the development of organic viscera?

6 Why must children engage in vigorous motor activities? How many hours a day is desirable for elementary school children?

7 What is the significance of the biped position? How should this influence the program of physical education?

8 What are the racial motor activities of man?

9 What differences exist between the skeleton of child and adult? What meaning have these for physical education?

10 Has the young child's foot an arch? What importance attaches to this fact?

11 What sex differences are there in the pelvis of men and women? Of what significance are these in running, jumping, hanging, and climbing?

12 What is the distinction between growth and development?

13 What factors influence growth?

14 How is development indicated in physiological age? What significance has this age for physical education?

15 Name and describe three types of body build. What implications have these for physical education?

16 Describe the anatomy of the human foot. What significance have the facts you present for use of the foot?

17 How are the abdominal viscera related to the trunk muscles?

18 Why do certain aspects of the heart's development condition physical education? What is the judgment regarding athletic heart?

19 Do joints have a normal range of movement? How do these facts relate to corrective physical education and physiotherapy?

20 Are breathing exercises necessary to provide sufficient oxygen? Explain.

21 What conditions the supply of oxygen in the tissues? Explain.

22 What is meant by the statement that gases are balanced in the blood? How is balance maintained?

23 What is reciprocal innervation? How can you illustrate its action in relaxation during movement?

24 What is the meaning of the phrase, fundamental to accessory?

25 Of what importance to physical education is the instability of the nervous system of the young child?

26 Why is free-play important for children?

27 What are the most serious handicaps to growth and development in the child 6 to 10 years of age?

28. Why is supervision desirable in physical education for the child 10 to 14 years of age?

29 In what ways are children excessively stimulated?

REFERENCE READINGS

1 Carlson, H. Some Significant Aspects of Physical Education. *Journal of Health and Physical Education*, February, 1936

2 Glover, K. and Dewey, E. *Children of the New Day*. D. Appleton-Century Co., New York, 1934

3 Haldane, J. B. S. *The Causes of Evolution*. Harper and Brothers, New York, 1932

- 4 Hardy, M C and Hoefler, C N *Healthy Growth*, University of Chicago Press, Chicago, 1936
- 5 Hooton, E A *Up from the Ape* The Macmillan Co., New York, 1937
- 6 Hooton, E A *Why Men Behave Like Apes and Vice Versa* Princeton University Press, Princeton, 1941
- 7 Jennings, H S *The Biological Basis of Human Nature* W W Norton and Co., New York, 1930
- 8 Meredith, H V *The Rhythm of Physical Growth*, State University of Iowa, Iowa City, 1935
- 9 Miller, E *The Neuroses in War* The Macmillan Co., New York, 1940
- 10 Rathbone, J L *Residual Neuromuscular Hypertension* Bureau of Publications, Teachers College, New York, 1936
- 11 Sherrington, C S *The Integrative Action of the Nervous System* Yale University Press, 1906
- 12 Shuttelworth, F K *The Adolescent Period* Monograph No 3, vol III, Serial No 16 Society for Research in Child Development, Washington, 1938
- 13 Williams, J F *Textbook of Anatomy and Physiology* Seventh Edition W B Saunders Co., Philadelphia, 1942
- 14 U S Public Health Service *Studies in Physical Development and Posture* *Public Health Bulletin*, No. 199, 1931

THE NATURE OF MAN—HIS PSYCHOLOGICAL FOUNDATIONS

“Reasons find the aim of human life the improvement and satisfaction of wants. By reducing those to which the nature of things and men denies satisfaction, or by increasing those which can be fulfilled without injuring the fate of others, man makes his wants better. By changing the environment into a nature more hospitable to the activities he craves, he satisfies them. The sciences and arts arose by the impetus of wants, and continue in their service. They are the ultimate source of all values.”—Thorndike

CHAPTER IV

The Nature of Man—His Psychological Foundations

The Unity and Diversity of Man.—The notions about *mind* and *body*, held by man over the centuries, have changed from time to time, and with these alterations, his ideas about education, its purposes, and methods have also changed. The concept of *mind* as a substance inhabiting the *body* prevailed long after the facts of organic unity were known, and they shaped the educational pattern of schools which were conceived accordingly to be places for training the mind. This older notion that *mind* inhabited *body* and that *mind* and *body* existed quite independently as separate and disparate entities are not accepted today by modern psychologists. Among informed persons there is no respectable doubt concerning the unity of the organism. The concept of a unitary relationship between various functions is fully established. Thinking may be affected by the condition of the digestive tract, the amount of hemoglobin in the blood, and the secretions from various glands. It is from this point of view then that Herrick states that we do not think with the brain alone. The old terms persist, however, but today the term *mind* is a name, not for a separate mental substance, but for a function of the individual.

Nevertheless, the organism shows not only relationships, but also diverse specializations. There are particular powers and these are dependent upon specific functional activity in particular organs. To declare that the whole child goes to school indicates that education should take into account all the significant functions of the living organism and should understand the relationships which exist. There is the danger, however, that this emphasis upon the whole child may lead to neglect of the particular.

We do not teach the whole child in general, we teach particular skills, we arouse particular interests, we present particular concepts. It is the particular which we can grasp. The whole child may go to school, but his learning consists of such particulars as

chinning himself, kicking a ball, writing words, adding numbers, and a countless number of specific things. The concept of relationships is helpful when it leads us to consider the various powers of the individual, it is hurtful when it leads to wishing for general good in the whole child. The concept of unity corrects the notion of separateness of *mind* and *body*, but the concept of diverse and specific functions provides the approach through which we teach.

Psychology and Instincts — Ideas about the existence and operation of instincts have changed. When two boys fought, this kind of behavior was explained as due to the instinct of pugnacity which was an organization of force in the nervous system driving the young to engage in fighting. The term "instinct" defined a rather precise, specific, internal organization that operated, on the whole, remorselessly. The assignment of sex activity by Freud to a single, internal psychic force, called *libido*, is illustrative of this concept.

It has become increasingly apparent in recent years that to name a behavior is not to explain it. The oversimplification, which results from the effort to classify, defeats the purpose of classification itself, which is to assist in thinking.

This denial of the precise nature of nervous organizations which direct the individual to certain kinds of behavior does not reject as valid the observation that man tends to exhibit certain kinds of behavior. There is, then, acceptance of the notion of drives, impulses, and urges toward ends, but also greater emphasis upon the wide variety in which these may appear, the influence of organic bodily states upon their functioning, and the force of the environment in producing sweeping changes in the products of their activity.

Impulses, Drives, Urges — The simple forms of animal life manifest impulses, drives and urges to action. They are not entirely quiescent, waiting only until something happens. The amoeba puts out its pseudopodia. It needs something. It acts. There are urges of some kind. It is not possible to explain what they are, although the older psychology attempted to explain Napoleon, for example, in terms of will-to-power, ambition, cruelty, and similar terms for exact, specific and separate instincts.

If we regard man as an organism which over the years has had

certain experiences, we can understand the persistence of urges to kinds of action as readily as we can the presence of skeletal, muscular, and organic patterns. Man is the product of the possibilities within the organism and the experiences which have occurred.

The inner urges of an individual denote a readiness to act in certain ways. It is obvious that children are constructed not only

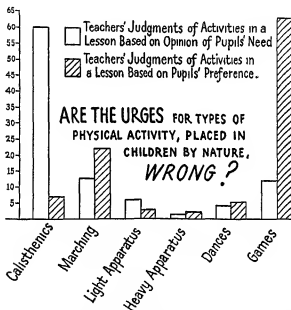


Fig. 10 — Comparison of teachers' judgments and pupils' preferences with respect to physical education (Baltimore Public Schools Survey, 1920-1921, vol. 2, p. 290.)

of muscles and bones but also of urges to engage in certain motor activities, such as running, throwing, jumping, climbing, and hanging. Refusal to accept the doctrine that there is an instinct for running does not demand also the rejection of the idea of a readiness in structure to act in certain ways.

It is not possible to state where this readiness resides nor of what it does consist. The best guess of its location is the entire

organism and doubtless its composition is glandular as well as nervous, bony as well as muscular, structural as well as functional.

Hence it appears that physical education begins with these impulses of children to engage in certain kinds of movement. Children are ready to run, to jump, to throw, to climb, and to hang. Moreover, they are not only ready, but are urged by this readiness to engage in the activity. In the face of this modern understanding of the organism, it would require rather overwhelming proof and most convincing argument that we should teach children invented arm, leg and trunk movements, severely different from those which the child is prepared by nature to do (Fig. 10).

Moreover, the readiness of the organism to engage in forms of behavior gives a clue to habit formation. In young persons impulses are the highly flexible focal points for widely diversified activities. Any impulse may become organized into one of several possible habits according to the situation in which it operates. As Dewey observes

"Fear may become abject cowardice, prudent caution, reverence for superiors or respect for equals; an agency for credulous swallowing of absurd superstitions or for wary scepticism. A man may be chiefly afraid of the spirits of his ancestors, of officials, of arousing the disapproval of his associates, of being deceived, of fresh air, or of Bolshevism. The actual outcome depends upon how the impulse of fear is interwoven with other impulses. This depends in turn upon the outlets and inhibitions supplied by the social environment."¹

This readiness of the organism, however, does not mean that any habit may accrue from any impulse. The impulse to run cannot be shaped by experience into the habit of erect posture. The old orthodox psychology isolated the individual from his surroundings. Modern psychology insists that behavior is not only an expression of the total situation—organism and environment—but also that impulses are the foci for the formation of habits, the materials out of which new habits arise. It would seem therefore but the simplest conclusion of common sense that teachers of physical education should take advantage of the impulses toward activity and

¹Dewey, John. *Human Nature and Conduct*, Henry Holt & Co., New York, 1922, p. 95.

seek to develop habits with respect to running easily and well, throwing accurately, jumping and landing with weight control, rather than types of habituations which are foreign to the matrix of native impulse

Finally, impulses for movement are relatively permanent. Bodily efficiency wanes early, the athlete is at his best in the twenties, and after thirty he has passed his peak. This is well illustrated in baseball and boxing. The urge for excellence is highest during adolescence, unless kept up by commercial rewards. But in spite of these fading bodily coordinations the impulses behind them persist and ask for activity.

Physical Education and Modern Psychology.—Modern physical education in its scientific and theoretical views recognizes that it deals with activities which carry with them an inner urge to do the very thing that the competent leader of the activity desires to set going. There seems therefore to be little justification for him to use extrinsic incentives because he is working with organizations, already set up and running, which provide their own intrinsic drives. The leader, however, may wish to direct the activity toward ends which are not inherent in the activity when left to its own propulsions. This is always the true function of the teacher—to use native impulses of the young as the starting points for assimilation of the knowledge, acquirement of the skills, and development of the habits of the society into which youth comes. The accumulated power of society is transferred into the personal ability of the individual. This is the social meaning of growth and development.

Psychologically, then, man is not a "definite collection of primary instincts" which may be numbered, catalogued and exhaustively described one by one, but an individual—still with driving impulses to action—responding to the play of many forces upon him.

In the newer views, the organism manifests energy in unstable equilibrium. This equilibrium is continuously disturbed, and continual effort to restore the balance goes on. Illustrations of this from the field of physiology are numerous. The impulses (called by some strains or tensions) lead to activity to satisfy needs of the organism, and the very activity disturbs some physiological equilibrium that in turn is restored by organic function. The dynamics

of living organisms then are the continual efforts to maintain an equilibrium. The interaction between the organism and the environment is continual.

But this general statement does not deposit all persons in a single mold. Within this pattern of interacting organism and environment there is the uniqueness of impulses and habits of every person. Jennings writes in this connection,

"The most important contribution of biology is what Behaviorism denies: the truth that human beings are endowed with diverse tastes, temperaments, aptitudes, diverse ways of responding to the same conditions. And that, therefore, as Davenport has well put it, there can be no *impersonal* science or art, of medicine, of hygiene, of education, of any matter that deals with human beings. Always the nature of the particular individual dealt with must be taken into consideration."²

Habits.—Experience is not a passive affair. In response to stimulation the organism projects itself actively into the situation, seeking the experience and even attempting to open up new areas of experience. This restless activity for food, for mates, for shelter, and other desirable ends leads to manifold activities marked by curiosity, invention and discovery so that satisfactions may be more complete or more general or more lasting. The picture is not that of passive self-preservation but an exceedingly active effort at self-expression and self-realization.

This activity exhibits the impulses, urges and drives of the organism in a wide variety of expressions, modified in a countless number of ways by the play of diverse environmental forces upon them. Out of this tremendous activity, however, ways of acting become established as habits. Habits then are secondary and acquired.

Habits are ways of behaving in the environment. They are not independent of the environment but require rather cooperation of the organism and environment. The innumerable habitual reactions which a person makes are not his private possession but always adaptations of a pattern with the various forces playing upon a person. The habit quality in posture shows this dual rela-

² Jennings, H. S. *The Biological Basis of Human Nature*, W. W. Norton, New York, 1930, p. 222.

tionship The posture of a boy in school before the principal and that of the same boy on the athletic field reveal the varying quality of the pattern and suggest the influence of outside forces This, of course, is contrary to the ideal of the posture enthusiasts They want the boy, for example, to possess a habit which will always give the same pattern response Habits may be acquired which are so rigid and inflexible that variation is rarely possible, and that even strong stimulations from without do nothing to alter Only the utmost confidence in one's judgment of what is desirable would lead a teacher to secure such habituation Nothing is left for improvement and nothing expected from adjustment If the habit of brushing the teeth with up and down strokes of the brush, as taught a few years ago, had been formed as a rigid and inflexible routine, the emphasis of present-day vibratory technic would be futile indeed

If habits are too rigid then, they limit future behavior In discussing this matter, Bode writes,

"The inventor, the architect, the statesman, and the scientist, for example, use their habits in solving problems, but the solution of the problem is something new Similarly old habits come into play when we carry on a conversation or play a game of golf Pronunciation, sentence structure, modulation of voice, all reflect old habits, yet the combination of words may be new, just as in golf the particular stroke may be somewhat different from any that we have tried before So far, behaviorism has failed completely to give an adequate or even reasonably plausible account of this trait In order to understand conscious activity it is necessary to deal with habits, not in isolation, but as elements in adaptive behavior

"The bearing of this conclusion on habit formation is significant It indicates that sheer repetition is not as important in shaping habits as we have been led to suppose Take, for example, the habit of giving way to anger A habit of this kind may be steadily fostered, even though the expression of it varies all the while Indulgence in such a tendency may mean that a man kicks the dog that comes in his way, slaps the child that disturbs him, growls at his wife, is crusty towards his neighbor, and sulks in the presence of his boss at the office The expression of the tendency necessarily varies, since behavior that has to be endured in the home would not be tolerated at the office But the disposition finds

some kind of outlet nevertheless, and it grows as a result of being nourished. Other tendencies, which are likewise present at the beginning, such as friendliness or sociability, sympathy, sense of humor, and the like, are starved through neglect and gradually lose the power to control the disposition towards anger. In the end, as Dewey says, the cultivation of this disposition may eventually result in murder, which could then fairly be said to be the expression of a habit, even though such a result had never occurred before. The moral is, of course, that habits may be fostered even though repetition is at a minimum."³

The Learning Process.—When learning was supposed to depend upon mere repetition, its explanation was easy. Real and substantial learning became a fixed and rigid habit. But such a notion is impossible of acceptance today. The problem is far more complex, and the explanations differ somewhat in detail.

Satisfaction and Annoyance.—The Chinese philosopher, Lin Yutang, observes that all satisfactions imply want. It is a common observation that individuals like to do certain things and dislike to do others. People spend their lives striving for certain situations and dodging other situations. This represents a fact of human nature and should be understood in its entirety and in relation to the learning process. Thorndike⁴ writes, "Civilized man is . . . set to attain certain results in a large fraction of his waking life, and what the environment offers him in the way of satisfiers is usually relevant to some one of the wants which are responsible for the activity of the period in question."

This same idea may be expressed in other forms. Watson and Spence state that human beings tend to behave in ways involving

"1 Movement *from* physical deprivations (pain, hunger, sex demands, needs for sleep), *toward* physical well-being, euphoria

"2 Movement *from* failure, thwarting, disappointment, *toward* success, mastery, and achievement

"3 Movement *from* being ignored or looked down upon, *toward* being looked up to, recognized, approved, admired

"4 Movement *from* being unwanted *toward* being loved and given intimacy, tenderness, and a sense of belonging

³ Bode, G. *Conflicting Psychologies of Learning*, D. C. Heath & Co., 1920, pp. 270-272.

⁴ Thorndike, E. L. *The Psychology of Wants, Interests, and Attitudes*. D. Appleton-Century Co., New York, 1935, p. 50.

"5 Movement from being worried, anxious, fearful, toward release, security, and peace of mind

"6 Movement from being bored, finding life dull and monotonous, toward adventure, new experience, and zestful activity"⁵

Kilpatrick stresses the fact that one learns what one accepts, which is another way of saying what is satisfying

The Law of Effect—Thorndike has explained learning in terms of the effect upon the individual. The learner selects and disregards experience in terms of satisfying states. Hence, the individual tends to repeat and learn those reactions which are accompanied or followed by a satisfying state of affairs. This statement of learning leads Gates⁶ to write in support of the view as follows

"If one is to agree that a process of learning is modified definitely by the consequences incurred, one must interpret consequences to refer fundamentally to the relation of means and end."

This is in harmony with Dewey's views that an end is conceived only as means are real steps to be taken toward the end. Human experience testifies widely to the fact that behavior is modified by consequences. The responses which we make may do nothing to promote learning because they fail to carry us toward the objective we have in view.

The satisfying state of affairs may be extrinsic to the experience and exist as rewards of various kinds. Thorndike⁷ writes on this point as follows

"Learning and work in homes, schools, and shops is, and perhaps always will be, loaded with many items which have little or no intrinsic interest to the learner or worker. He is induced, or induces himself, to learn them by appeals to pride, self-respect, love of parents, desire for approval, prudence, and the like."

Graphic Portrayal of Learning—According to Thorndike the connection between situation and response in the learning process may be represented as changes in the bonds between neurons of the

⁵ Watson, G., and Spence, R. B. *Educational Problems for Psychological Study*, by permission of The Macmillan Co., Publishers, New York, 1930, p. 526

⁶ Gates, A. I., Jersild, A. T., McConnell, T. R., and Challman, R. C. *Educational Psychology*. The Macmillan Co., New York, 1942, p. 328

⁷ Thorndike, E. L. *Loc. cit.*, p. 108

nervous system. These bonds are precise neural elements and constitute an exceedingly clear and graphic way of describing what takes place in the process. Thorndike holds that we learn as we strengthen bonds.

The concept of stimulus (S)-response (R) learning by which bonds in the nervous system are strengthened or weakened is subject to the criticism that reactions take place in a "field" in which many elements must be coordinated to an end. Learning to play golf is not learning separately how to stand, how to grip the club, how to swing it, how to follow through, how to keep the head down, but rather how to do all these in a coordinated way in various situations of terrain, score, previous errors or success, companions, weather conditions, and other elements of the "field." This idea of the whole as something more than the sum of parts represents the Gestalt view.

To say, however, that Thorndike's situation (S) is a single item is to ignore clear statements he has made in stating his theory. The situation is all which comes within the receptive field of the individual. The starter on his mark is aware of many factors but until he learns to respond to the starter's gun he is left behind in the race.

The Gestalt View—The Gestalt psychology denies the validity of this specific situation-response (S→R) explanation. They maintain that behavior does not result from just one stimulus at a time. There are many stimuli, there is general reception of these, and purpose of the individual determines what the reaction will be. Instead then of

Situation (S)→Response (R)

this view maintains that there is

A Constellation of Stimuli→Organization into a
Pattern Provoked by Purpose→Response to the
Results of the Organization

It is obvious that a mystical element is now introduced into the problem. The idea of organization into a pattern revives the Aristotelian notion of entelechy. The purpose represents a preference for the good. If this were satisfaction it would be more readily

acceptable, but emphasis upon some psychic force which organizes the stimuli for purposive ends seems implied in the theory

When applied to such an experience as running a 100-yard dash, the problem may be more fully examined. The runner is on his mark. There are many stimuli, they could be endlessly enumerated, ranging from the physical surroundings, the social occasion, and the contending athletes to the remembrances of previous performances, instructions of coaches, and expectations of friends. But there is one stimulus to which he responds—the starting signal. The old pattern that he learned in practice that was satisfying to him, he now employs—or he is left on his mark. There seems to be no Gestalt here, only habit and satisfaction.

According to the Gestalt view, the organization of the situation proceeds until a meaningful pattern comes. When this happens insight takes place. Insight is not supposed to be any change in neural connection or organization. Insight, too, seems somewhat mystical unless it is interpreted as satisfaction with some choice which has been made.

Washburn⁸ calls attention to three principles of Gestalt psychology which have bearing upon the learning of motor coordinations. The principles are

“Organized and complete behavior are just as primary and automatic as are random and incomplete behavior. They appear in all stages of development—even in unicellular organisms. Primitive behavior is not characteristically disorganized or partial, but, rather, is vague and crude.

“The organization develops through attempting to solve problems, i. e., the nature of the organismic change produced by experience depends upon the nature of the problem as well as upon the nature of the environment.

“Problems (or basic insight) cannot be built up piecemeal. Complete behavior can no more be built from units of incomplete behavior (e. g., spinal reflexes) than a complete organism can be built from incomplete cells.”

Applying these principles to a coordination problem Washburn writes

⁸ Reprinted by permission from *Educational Psychology*, edited by Charles E. Skinner. Copyright, 1936, Prentice-Hall, Inc., New York City.

"What procedure would be followed if the principles were properly applied to the teaching of swimming? A common answer to this question—and not a bad one—is, 'Follow the natural method. Give the child a natural swimming problem to be solved.' But this may be interpreted as meaning, 'Throw him in and let him swim out.'

"The trouble with such a crude procedure is that it includes many bad features along with the good. The shock, the child's loss of confidence in the person who throws him in, the possibility of failure.

"Upon analysis it appears that the valuable points in the 'natural method' are that it presents clearly a typical problem in a typical setting in such a way as to elicit a complete primitive act of swimming. These same benefits can be obtained in a safer way by the swimming teacher standing between two structures which the child can grasp above the water and stand on below the water. In this position the instructor may encourage his pupil to jump from one standard to the other, the distance being such that the child must swim as well as jump, and the instructor is so situated that he can (1) *insure success*, and (2) *gradually remove his help* during repetition—the two prime factors in good teaching.

"The strategic position of the teacher is the first basic difference between the arranged set-up and the crude 'natural method' which it resembles. The second basic difference is that the instinctive reactions of the learner are more controlled. The mood is one of confidence, for the child is allowed to play around on the standards until, seeing others jump, he is ready to try, and the direction of effort—the attention—is such as to cause the body to stretch out on the surface of the water while the legs and arms make 'primitive' swimming motions. There is not the danger which there is in the crude natural set-up that the learner will instinctively try to take a perpendicular position in an alarmed effort to climb out of the water."

In complex skills such as skating, golf, tennis, and football, learning is the result of variation in the total response rather than the fixation of correct responses and the elimination of errors. Methods of teaching skills therefore should reflect the particular psychology that is accepted.

The Gestalt psychology places emphasis upon the whole rather than the part in behavior. The contention is that one learns all over. This has meaning as it gives expression to the physiological

concept of related and correlated functioning of organs and the integrative functioning of the nervous system, but it is misleading. Obviously in learning to jump, the hair and skin are not learning—at least not to a noticeable or significant extent nor in form or quality which give meaning to the phrase that one learns all over.

The Objective Psychologists—Another psychological concept of nature and learning derives largely from biological experimentation. The existence of genes is accepted. Heredity is represented by the genes and environment is the influences of internal and external forces that play upon the gene material of man.

To this group of psychologists, learning produces changes in structure. If the individual acts, then change occurs, and if the action is persisted in, substantial change in structure results. In this view then behavior is a cause and also a result of structural change, since form influences function. In effect, form and function are merely two ways of looking at the same thing.

This psychology is not at all precise regarding the changes that occur. It refuses to accept the Thorndike view of S-R bonds, but offers no concrete suggestions in return. Most of the notions of this group about structural change are well known understandings of how use affects form and of how form and function operate. They have contributed little to the problem.

Practical Suggestions from Psychology—There are many suggestions from psychology for the learning of motor activities. Little has been done in study of specific activities of physical education although some data are available.

Whole and Part Methods—There are many conclusions that the whole method is better than the piecemeal one. It is the accepted method in teaching swimming today.

Nevertheless, the whole-part problem is not a simple one. In the first place, it is important that the unit to be learned is a functional whole. Putting various unrelated exercises into a lesson is not comparable to the wholeness in the act of swimming. The superiority of the whole method depends precisely upon this fact that in physical education much of the program consists of functional wholes, such as a game, a dance, a stunt, or some other complete act. In the second place, the value of the whole method rests upon the learner's comprehension of the whole pattern to be learned. In swimming instruction, for example, it is difficult for all

learners to understand what the legs, arms and head are to do in the whole act of keeping afloat and moving through the water. Therefore, when the skill is very complex so the pattern cannot be apprehended readily, then it is wise to break the whole into its functional parts. Thus, the kip-up on the high horizontal bar should be broken up for most learners into the forward swing with body arch, the back swing with feet elevated to the bar, and finally the thrust which completes the act. In such analysis it is important to keep in mind the relation of parts to the whole.

Transfer of Training —The old view held by some persons today who seek to speak for educational methods is that memory, discrimination, judgment, deliberation, reasoning, skill, attention, order, obedience, etc., are general powers of the mind and that they can be added to very much as you add to a pile of bricks by putting more bricks on the pile. Thus, the school is looked upon as the agency for the development of these general faculties. Typical of this view are the following:

"This is primarily the training of subjective motor control and incidentally of attention, will, and self-discipline." "For developing the character and cultivating a wholesome temperament there is no discipline superior to athletics." "Will power and attention are educated by gymnastics." "The Battle of Waterloo was won on the playing fields of Eton."

Numerous experiments have been performed to establish the truth concerning the transfer of ability in one capacity to that in another. James' first experiments in 1890 have been followed with numerous other ones. If transfer is to occur there must be identical components. Gates⁹ phrases this view as follows:

"The theory of identical components, then, would deny that practice in tennis would improve one's attention, will power or temperament for meeting all situations or dealing with all kinds of data equally but would affirm that certain *skills, procedures, and attitudes* such as judging the flight of a ball, remembering to keep one's eye on the ball, and to keep cool by thinking of the game instead of the spectators would carry over to another activity such as handball to the extent, roughly, that the two games and the general situations have important characteristics in common."

⁹ Gates, A. I., Jersild, A. T., McConnell, T. R., and Challman, R. C. *Educational Psychology*. The Macmillan Co., New York, 1942, p. 514.

It is evident that transfer of training does occur, but not in the form believed to be true some years ago. Transfer is not automatic. The more meaning there is in an experience the more likely it is that something will be carried over. Development of an attitude of fair play may be so generalized by an individual that he tends to be fair in situations other than that in which it arose, but this is not likely to occur unless there is "a deliberate attempt to interpret new situations in the light of past experience and to apply appropriately the meanings or methods previously learned."¹⁰

Applied to the problems of physical education it would appear that there is no evidence for and considerable evidence against the notion that ability gained in arm swinging upward above the head will result in anything more than arm swinging upward above the head or something very similar to that, for example, arm thrusting upward above the head. The accuracy and alertness so confidently written about leave the impression that the participant in certain exercises acquires an increase in accuracy as a capacity. It would be reasonable to expect if such were the case that there would result greater accuracy in typewriting, in delivering messages, in citing dates and references in books, and in numerous other ways from being accurate in response-command exercises. Such is not the case, however. Rodgers'¹¹ study on the learning of game skills supports the theory of identical components.

The Learning Curve—The learning curve shows an interesting characteristic in the progress of learning. The process does not go on at a constant rate. There is marked success at the beginning. The unusual skill of the amateur when he first tries a new skill is well known. There follows as a rule in most learning, then, a period in which progress is delayed. This is known as the plateau. Plateaus may be caused by too rapid progress at the start with lack of sound and thorough foundation in the preliminary skills so essential for the subsequent steps. Trying too hard may prevent learning. Plateaus are associated with external conditions, such as the proximity of vacations, depressing weather conditions, a change in the teacher, fatigue, and lack of condition. A plateau is a level or depression lasting for a long time, weeks or months. They are not

¹⁰ Gates, A. I. and others. *Loc. cit.* p. 537.

¹¹ Rodgers, E. *The Teaching of Team Games*. Bureau of Publications, Teachers College, New York, 1936.

common. They correspond in the learning process with the bodily condition known as staleness (Fig 11). Temporary fluctuations in performance are not to be regarded as plateaus. Short up and down movements in the learning process are universal. Various studies indicate that there is no one curve of learning. The form of the curve depends upon many factors such as the skill to be learned, the maturity of the learner and his past experience, the

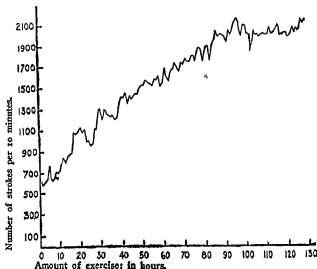


Fig 11 —Improvement in typewriting by the "touch" method. Improvement is fairly uniform until the hundredth hour, where the curve flattens out. This is probably a "plateau" rather than the physiological limit. The highest speed attained is about 30 words a minute—not a high rate (From Thorndike, *Educational Psychology*, vol II, p. 189, after Book.)

length and distribution of practice periods, and the learner's ability to organize his responses into a more coordinated pattern. The appearance of plateaus may reflect habits, fatigue, interest, distractions and other temporary influences (Fig 12).

The Conditioned Reflex—Experiments of Pavlov with dogs having a fistula of the parotid gland, established so that the flow of saliva could be collected and measured, showed that by

training, the flow of saliva could be made to take place when a metronome, musical sound, optical signal, or other stimuli were operated. The procedure consisted in preceding each meal by some such mechanical stimulus, and after a certain number of repetitions the association was established so that after being "conditioned" the saliva would flow whenever the typical signal was given, although by nature the carotid secretes saliva only when the dog sees food. This "conditioning" was carried to such a degree that in the well-developed reflex to the stimulation of 100 beats per minute, a change of the rate to either 96 or 104 beats was immediately

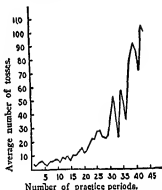


Fig. 12—Improvement in tossing and catching balls. The improvement is slow at the start, but becomes more rapid as the subject becomes more proficient. (From Thorndike, *Educational Psychology*, vol. II, p. 120, after Swift.)

reacted upon by a marked diminution or even complete cessation of the flow of saliva.

Inhibition—As a part of the idea of transfer, inhibition is frequently made to appear as important and vital in the work in gymnastics. Thus, much of the posture "work" is based upon the conception that the individual is to inhibit the tendency to droop, or in the so-called "educational exercises" he is to learn inhibition through responding in a rigidly prescribed fashion to the command of the teacher. The view is that by inhibiting movement until the command of execution is given, he has thereby learned inhibition.

Inhibition is a common phenomenon of the organism, particularly in the internal organs. Thus, the movements of the ali-

mentary canal go on without the intervention of consciousness, and yet under certain conditions, largely emotional, they may be altered or completely checked. The striking case is that of the heart which responds to the stimulating action of the accelerator nerves and yet under the control of the vagus (involuntary) may be inhibited to a remarkable degree.

In the skeletal muscles over which we have conscious control the fact of inhibition is directly centered. Teachers of gymnastics hold a class in restraint, in suspense, inhibiting every movement, with the idea of attaining inhibition as a general quality so that the individual will have a kind of power to inhibit all acts until the proper time.

Ladd and Woodworth in discussing this point write

"It is not easy to form a complete conception of the mechanism of inhibition, but there is one significant fact about it which is of no small assistance to this end. *Inhibition itself is not merely an interruption of activity*, for it has an after-effect that is the opposite of depression. When a muscle has undergone inhibition, it becomes at once readier for a new phase of activity. It is more easily aroused than it was before, and it is likely to show more force in its next contraction. That is, the phase of inhibition is followed by a rebound to greater activity, and the rebound, like the inhibition, is primarily a central, and not a muscular affair. This after-effect of inhibition is probably important in the numerous alternating movements which occur in locomotion, breathing, chewing, pounding, etc., the muscles (or their controlling nerve cells) which are inhibited in one phase of the movement are thereby made ready for the succeeding opposite phase."¹²

Thus instead of viewing inhibition as a character quality to accrue from the mere stoppage of gymnastic movements or the checking of a desire to move, it is to be thought of as a preparation in the body for movement, that its effect is to reinforce the ability of the individual to move. This latter point emphasizes the necessity to consider the damage to the mechanism by asking or requiring it to keep from action when the preceding procedure has in the physiological economy made the individual more ready to act.

In short, that which is desirable in self-control, inhibition, and

¹² Ladd, G. T., and Woodworth, R. S. *Elements of Physiological Psychology*. Charles Scribner's Sons, New York, 1911, p. 164.

self-direction relates to a learning by the individual of the conditions under which he should act and the development of an attitude toward the whole experience which favors his acting in such fashion, that is, in relation to the conditions. The idea that response-command exercises have anything to contribute to this process in normal social life is without any supporting evidence whatsoever.

Behavior and Past Experience—Psychologists differ in their explanations of how learning takes place but all are in agreement that past experience influences present behavior. Whatever the individual does becomes a datum in subsequent action. Thus, when we teach a child to catch a ball by bringing the ball toward himself rather than by holding the arms stiff, we base our expectation of future behavior in this matter on the principle that a past experience leaves its own particular deposit. How effective this is or how great the learning depends upon satisfaction, frequency of use, and recency of occurrence.

Overlearning of Motor Skills—Whenever a skill is learned, its retention depends upon the use and practice of it. If several days intervene between the learning to do a skill and performing it again, about the same number of trials is necessary to perform the act successfully. However, if when the skill is learned there is also overlearning—that is, practice of the accomplishment—then it is easily repeated at some future time. There appears to be a ratio between the amount of overlearning and the length of interval that may elapse without loss of skill. Walking is an example of a skill in which much overlearning has occurred. Ice skating usually is well overlearned. When this is the case, many years after learning to skate, a person may perform again the skill successfully. It is apparent then that drill on an accomplished skill is important, but especially so on those skills that we desire to retain.

Distribution of Practice Periods—Very little has been achieved in discovery of the best distribution of practice periods in the different motor activities. From the work that has been done it appears that practice for short periods and often is best. Distributed is better than concentrated practice. Fatigue makes short practice periods preferable to long ones. Boredom and lack of interest decrease effort and these qualities may be more prominent in long periods.

Cozens¹³ in a study of college freshmen found that learning was more rapid if the practice of 100-yard dash, 120-yard low hurdle, half-mile run, running broad jump, 12-pound shot, and discus throw is spread out rather than concentrated. It would appear then that short periods for a longer time are better than long periods for a shorter time, but the optimum is unknown. How short may the period be? How long may the interval be? These remain to be discovered.

Motivated Learning—Many grown persons remain unskilled because they lack motive to develop their native capacity. They tolerate in themselves needless personal insufficiency. Learning, therefore, is dependent upon the attitude taken toward the skill, the set of the mind, the motive behind performance. Mursell¹⁴ stresses the importance of an aggressive will toward the matter to be learned, which contrasts with a wishful thinking response that often operates. Much of the poor walking among adults is due to lack of will to walk better, to discover the exact coordinations required, and to have a motive for improvement.

Motive is an incentive. Many physical education activities carry their own incentives. Most boys are eager to play a game—there is adequate motive. But frequently there is little motive for playing it excellently or mastering the basic skills of the game. Here the teacher must help children to understand the relation of technique to the activity, to awaken the purpose to improve performance, and to give adequate attention to practice.

Hurlock¹⁵ reports that rivalry acting as a special motivation improves the learning gain 41 per cent as measured by a control group. Symonds and Chase¹⁶ report that motivation from an experienced situation is more effective than from a described situation.

Confidence and Learning—One learns better if the problem is attacked with confidence than if fear and doubt prevail. Fear, timidity and doubt restrain the learner. In many skills one must

¹³ Cozens, F. W. A Comparative Study of Two Methods of Teaching Class Work in Track and Field Events, *Research Quarterly*, December, 1931, pp. 75-79.

¹⁴ Mursell, J. L. *Streamline Your Mind*. J. B. Lippincott Company, Philadelphia, 1936.

¹⁵ Hurlock, E. B. The Use of Group Rivalry as an Incentive, *Journal Abnormal and Social Psychology*, 1927, 22, pp. 278-290.

¹⁶ Symonds, P. M., and Chase, D. H. Practice vs. Motivation, *Journal Educational Psychology*, 1929, 20, pp. 19-35.

"let go" in order to succeed. It requires confidence to "let go" in skating, in apparatus activity, in tackling, in numerous activities that require courage. Even in sports such as golf where courage is not required to perform the stroke, the ability to "let go" is tremendously important. Confidence in ability to accomplish a skill promotes relaxation and tends to overcome neuromuscular hypertension that prevents good movement.

Summary.—Interpreting the psychological data in this discussion of man's nature, the following appear

1 The essential unity of the individual as a correlated and responding organism is everywhere supported by modern science

2 The dualistic notion of separate mind and body is not acceptable today

3 We do not teach the whole child in general, but we teach particular skills, knowledge and appreciation

4 The whole child goes to school, but he learns particulars

5 Instinct, as a term, has disappeared. Human nature remains the same. Today the term impulse or urge to action is employed

6 To name a behavior does not explain it

7 Native impulses of children are the focal points for widely diversified activities, for habituation in one of several ways education may desire

8 The individual seeks to satisfy his wants. He learns in such attempts. Education has a variety of techniques to change this learning by substituting other wants or by developing dissatisfaction with the wants sought

9 Gestalt psychology places an appropriate emphasis upon the attitude with which one approaches a situation.

10 The transfer of learning depends upon identical components in situations, or the acquirement of meanings or general adjustments toward the problem

11 Past experience influences present behavior

12 Overlearning is valuable for retention over long periods of nonpractice

13 Desirable lengths or optimum distribution of practice periods is unknown in detail, but in general short periods for a longer time are better

14 Many physical educations provide their own incentives

15 Confidence aids in learning

QUESTIONS

- 1 Discuss fully the concepts of *mind* and *body* which you hold. What is the meaning of the concept of unity of the organism?
- 2 How do unity and diversity relate to each other?
- 3 What is the difference between the concept of instinct and that of urge, drive, or impulse?
- 4 What is the meaning of readiness of an individual to engage in a motor activity?
- 5 Are the fundamental urges to engage in activity temporary or relatively permanent?
- 6 What are the efforts of an individual to maintain a psychological equilibrium?
- 7 How can physical education operate to influence the learning of habits?
8. Rigid habits may limit the individual. What examples of this can you give?
- 9 What are wants of people? How do they influence action?
- 10 What is Thorndike's idea of satisfaction and annoyance? Using his concept, illustrate it in physical education.
- 11 What is the law of exercise? The law of use and disuse? How do these operate in learning a skill?
- 12 What is the Gestalt view regarding the whole field?
- 13 Can you apply the Gestalt view to learning a movement?
- 14 What are whole and part methods?
- 15 What is meant by transfer of training? Will skill in roller skating help to learn ice skating, tennis, golf, or dance? Explain your answers.
- 16 What does the learning curve show?
- 17 What is the conditioned reflex? How does it operate in physical education?
- 18 What is inhibition?
- 19 What is the influence of past experience in learning?
- 20 What is overlearning? Is it desirable?
- 21 What are some points regarding the distribution of practice periods?
- 22 How important is motivated learning? Does it affect speed of learning? Explain.
23. What effect has confidence on learning?

REFERENCE READINGS

- 1 Bode, B H *Conflicting Psychologies of Learning*. D. C. Heath and Co., Boston, 1929
- 2 Bode, B H *How We Learn*. D. C. Heath and Co., Boston, 1940
- 3 Bowden, A O and Melbo, I R *Social Psychology of Education*. McGraw-Hill Book Co., New York, 1936
- 4 Cannon, W B *The Wisdom of the Body*. W. W. Norton, New York, 1932
- 5 Child, C M *Physiological Foundations of Behavior*. Henry Holt and Co., New York, 1924
- 6 Cole, L *Psychology of Adolescence*. Farrar and Rinehart, Inc., New York, 1936
- 7 Dunbar, H J *Emotions and Bodily Changes*. Columbia University Press, New York, 1935
- 8 Griffith, C R *Psychology Applied to Teaching and Learning*. Farrar and Rinehart, Inc., New York, 1939
- 9 Haldane, J S *Organism and Environment*. Yale University Press, New Haven, 1917
- 10 Hartman, G W *Gesalt Psychology*. The Ronald Press, New York, 1935
- 11 Jersild, A T *Training and Growth in the Development of Children*. *Child Development Monograph*, No 10, 1932
- 12 Lashley, K S *Studies in the Dynamics of Behavior*. University of Chicago Press, Chicago, 1932
- 13 Meek, L H *Your Child's Development and Guidance*. J. B. Lippincott Co., Philadelphia, 1940
- 14 Raup, R B *Complacency*. The Macmillan Co., New York, 1920
- 15 Thorndike, E L *Adult Learning*. The Macmillan Co., New York, 1932
- 16 Thorndike, E L *Adult Interests*. The Macmillan Co., New York, 1936
- 17 Thorndike, E L *The Psychology of Wants, Interests, and Attitudes*. D. Appleton-Century Co., New York, 1935

THE NATURE OF MAN—HIS SOCIOLOGICAL FOUNDATIONS

“ I would set a type of training which aims at the acquisition of *skill*, in one or other of its socially valuable forms, which are innumerable, contending that knowledge of any kind which fails to eventuate in skill is, at best, half-grown, and because half-grown, a source of cant, claptrap, insincerity, and shallowness, more likely to disqualify the possessor of it as a member of society and a citizen of the world

“To enable him to play that part it is before all else necessary that the ideal of the skillful workman, a thing of infinite variety, should replace the ideal of ‘the able critic of life’ as the governing aim in education—a lesson hard to learn in a generation which has become mothered in ‘criticism of life’ but is rapidly losing the use of its hands ”—Jacks

CHAPTER V

The Nature of Man—His Sociological Foundations

Original Nature and Custom —The continuity of man and the society of which he is a member prevails. Custom and established ways of behaving powerfully shape and fashion individuals. At one time original nature was believed to consist of certain definite qualities which provided sole and adequate explanations for man's behavior. Man did thus and so because he was angry. Merely giving a name to these qualities, such as fear, anger, sexual love, gregariousness, and sympathy exemplified the purpose to explain behavior in terms of their operation. To possess anger, for example, was sufficient explanation of any manifestation of anger.

The continuity of the individual and the group to which he belongs renders such a notion impossible. MacIver stresses this relationship when he writes,

"our environment is not the world about us but rather that world, with all its aspects, as it comes into relation to our lives. The more complex the life the more complex must the environment be and the more complex the adjustment to this total environment."¹

There are, of course, elements in human nature, and psychology has given names to them. The names, however, are nouns that follow verbs. Man acts or behaves in certain ways and later the action is given a name. Why he acts or behaves in a particular fashion is to be explained not only in terms of an inherent readiness but also with respect to an ever-present world in which he lives. This emphasis, then, upon interaction between the individual and various influences in the environment is not an attempt to deny that forces exist in and operate through the individual but rather to refuse to assign to them a supremacy in human behavior. In similar fashion, more realistic views regarding

¹ MacIver, R. M. *Society*. Farrar and Rinehart, Inc., New York, 1937, p. 105

heredity and environment are being phrased today. The hereditarians who flouted and denied the observations of the environmentalists were met with a corresponding denial from the latter of the claims proposed by the former. The "all or none" principle of physiology by some strange propensity of nature or by some curious custom, or by both, seemed to phrase an essential approach for workers in these fields. But better understanding of the problem has forced sane and less exclusive views. The affirmative results from both fields contribute to an appreciation of what is often called, "the total situation," a continuity of man and society, an interaction, action and reaction, between man and the forces which play upon him and to which he responds.

Human Behavior, the Interaction Principle.—All human behavior represents interactions between elements of nature and the various forces of the environment. These elements are the stuff with which the individual reacts. They are real habits, real awarenesses, and real levels of responding, regardless of the difficulty in locating them in the organism or of describing all their variations.

The forces that play upon the human materials of man are legion. They range from the diverse physical forces of climate, geography, wild animals and other men to the extremely complex habits and customs of the society in which he lives. Custom alone often explains behavior. When an Igorot in northern Luzon is cheated in a trade, he resorts neither to the courts for justice nor to public opinion for redress, but taking his head-ave he starts down the trail that leads to a behavior that is socially approved in his environment and consistently maintained there. Indeed, the behavior of peoples everywhere reflects the interaction of nature and custom, propensity with tradition, man with society.

The Social Learnings of Man.—The learnings of man with respect to behavior and especially moral behavior are embodied in institutions. Marriage, home, and family hold much of human experience and, in their best forms, are distillations and wise interpretations. Many forms of behavior, sure reflections of established ways of acting, are generalized conventions, *mores* that operate widely even among peoples whose institutions vary. These social learnings that the young acquire may be newly established ways of behaving or they may rest upon custom that is very old. Oldness rather than newness tends to prevail since customs change

slowly The child born today is the offspring not only of ancestors who lived in trees but also of ancestors who lived in the Middle Ages In terms of present relative influence it is probably true that the social inheritance from the Middle Ages more intimately and more powerfully touches life as it is lived today than the biological inheritance of arboreal habitation

Only with the greatest effort by individuals and after continuous experimentation by numerous persons does custom change To break with authority challenges society that embodies it, to flout tradition opposes the institution that conserves it Thus, individual behavior consists either of support of the social forces which play upon man or of attack upon them When any particular custom has widespread social approval, acceptance or rejection by a single individual is of little moment; when this single person becomes a group, or gives expression to ideas held by many in unformed groups, then the conflict is real, and the outcome uncertain

In any case, newborn children are subject in turn to their world The process is continuous The continuity of man and society is evident The society into which children are born may be stable and little changed from that which their parents entered or vastly changed in little more than a generation Nevertheless, it is their world into which they have come, it is their world of which they must become aware, and it is their interaction with it that makes the lives that they must live

Human Behavior and Calamities.—Fear has always been a powerful incentive in behavior Fear of calamities, that came out of the unknown to make intolerable or impossible life as it was lived, persists today in fear of conduct, and hence disapproval of conduct that might invite calamity

The experience of society with unknown forces led either to submission or to magical efforts at control What is not understood cannot be managed successfully Man dreaded calamity because he had no understanding of a plague that would cause the death in a short time of whole communities, he dreaded famines that starved nations, storms and earthquakes that erased cities, and warring bands that descended upon peaceful peoples to kill, burn, ravage and destroy

Knowledge has increased through science Plagues and pesti-

lences have come largely under control through knowledge of microorganisms, sewage disposal, and lines of transmission of disease. Today it is difficult to appreciate the dread of calamity that prevailed in the Seventeenth Century about the Black Death and yet something of that mood exists in the sense of helplessness and fear that arises among parents when an epidemic of infantile paralysis occurs. Famines are rare today and yet mankind in China and Russia knows famine. The wild vagaries of nature in the Ohio and Mississippi rivers in flood, San Francisco and Yokohama suffering earthquake, Mt. Pelée in eruption are near enough in time and place to capture in each generation something of the fear of calamity that in earlier times operated continuously and everywhere.

Man's experience with calamity and his complete ignorance of causal factors has led him over the years to be suspicious of many behaviors that might invite or precipitate a calamity. When the cause of a condition is not known the tendency persists to question many possible causes, the conservative mood prevails when the facts are not known. Hence the superstitions about evil spirits and the attitude toward witches in Puritan New England reflect the fear that those called witches related to calamity in some way.

From this point of view, then, behavior of the individual has always been important to society. Although in many respects the family is the chief source from which individual behavior flows, the institutions, in addition to the family, established by society contribute profoundly to human conduct. Why do we have schools? Obviously not so that young persons may become alumni, nor only that they may acquire learning. Indeed the slogan most heard in the battle for free public school education was, "More schools, fewer police." Why do we attempt to teach the young? Why do we interfere with the action of others? The answers go back to these early experiences of man with calamity.

Behavior of an individual which may produce calamity courts immediate disapproval. General condemnation of Japanese behavior in 1937 by Americans was not purely an expression of high regard for Chinese civilization, nor only a gesture to lofty humanitarian sentiment, but it was also a manifestation of dread of that calamity which Japanese action may bring. Since behavior is the

response of an individual to the varying forces that compose a situation for him and since society is concerned with influencing this response, parents and teachers undertake the task of teaching the young certain acceptable responses, and some persons study the forces that operate so that better responses may be made as the nature of the forces is understood. Behavior which is based upon facts in the situation is better than behavior based upon superstitious explanation of phenomena because, under the former interaction, guidance may be developed for attack upon similar problems, experience is thereby enriched by the verifiable data of action and reaction.

Aspects of Contemporary American Culture.—There are sociological aspects of contemporary American culture that bear upon physical education broadly conceived and taught in the schools. In a very general sense everything that contributes to a culture touches all life, and therefore no item in the American scene should be ignored with respect to an area of American education. Doubtless this is true academically, but for practical purposes in modifying programs and in promoting the teaching of activities, it may be more helpful to discuss only those aspects of American culture which bear somewhat directly upon the area of physical education.

Neglect of Body—From the fourth to the fourteenth centuries western European thought was dominated by the belief that the only true reality was spirit. The supersensual dominated, that which was called body was base and mean, something from which escape was desirable however uncertain the possibility might be. This belief in spirit culminated in efforts to attain spiritual excellence by degradation of the body.

In the Christian Church, asceticism took the form of physical debasement, for the purpose of securing spiritual excellence. The unwholesome lives of verminous saints became the standard. Paul and other teachers sought diligently to combat the tendency to carry over many of the ascetic taboos. Thus, except for the monks and saints, there remained the right to be married, to own property, to engage in war and commerce, or to assume public office.

Asceticism, however, held the body in contempt. It is not, however, philosophic asceticism which is responsible today for neglect

of *body*, because that philosophy has few followers in this materialistic age. Nevertheless, the basic prejudices of that philosophy, traditional ways of thinking, and even habits of speech remain. Asceticism as a philosophy may be unknown or rejected, but the ascetic spirit remains. In the face of this social force, it is important to examine the dichotomy presented by the mind and body concept.

The Greeks and Body—The long account of the conflict over mind and body cannot be given here, but it is instructive to examine the Greek view of the matter. The achievements of the ancient Greeks in physical education lead us to inquire into the thinking of the Greek philosophers about this and related problems of physical education. Plato regarded body and mind as separate and disparate, and yet when he wrote of physical education, he insisted that the soul was the object of gymnastics as well as of music. It is apparent that in Plato's conception of education, body and mind are not simple opposites. For both Plato and Aristotle the aim of physical education was not the education of the physical alone but rather the development of personality qualities through the physical.

It is becoming increasingly clear that the words physical, mental, and social are aspects of a totality, a unity, a personality. It is now evident, as we follow the threads of investigation and teaching, that one may, for purposes of description, speak of physical effects, or mental qualities, or social values, but in reality these are only aspects of life which is single and absolute. One cannot dissect the human body without violating a fundamental law.

Evidence of Relationships—The organic evolution of man produced the human hand as well as the human brain. The former is as much mind as the latter and indeed the development of the hand made possible the development of the brain. Of course, what is called "mind" represented something new in organic evolution.² One need not consent to the extremer forms of the doctrine of emergence to accept this view, nor does respect for scientific thinking demand that one remain hostile to the concept that mind is not a function of the brain. Patrick says

² Haldane, J. B. S. *The Causes of Evolution*. Harper and Brothers, New York, 1932, pp. 144-170.

"It [mind] is the characteristic activity of a unitary complex of an exceedingly high order. It is not a function of any organ or set of organs in the body but an activity of the individual as a whole in interaction with his physical and social environment."³

And Herrick, with convincing logic and evidence from comparative neurology, says we are *not* body and spirit. Indeed, for him the negative is not quite adequate. He writes in answer to the question, Is human nature, body and spirit? "No, the unity of the normal personality is the most evident and incontrovertible thing in our experience."⁴

Moreover, this view should at once and for all time combat the pernicious and absurd contention that physical education is concerned with body-building, defect-correcting, and health-producing results and with these alone. Indeed, it is argued by some that physical education is not concerned with moral and social qualities at all, but only with physical ones, and that any attempt to postulate moral education on a games-and-play level is not only ridiculous but indeed positively charlatanesque.

Such is a counsel of error, founded on incorrect physiology. On the contrary, James, Thorndike, and Bode⁵ to mention three outstanding thinkers, support the fact and implications of this recognition of the unity of man.

The emphasis upon unity increases the significance of mental and physical relationships. From many sources there are evidences of this.

From Germany comes the report of a study by Dr. Hermann Paull of 1400 children between the ages of six and fourteen years who had failed at some time to be promoted. In each of sixteen age groups into which they were divided for the study, these "repeaters" were found to be inferior in weight and height to children who were nonrepeaters. Social study revealed that only a few were from very poor homes. In another study Dr. Paull divided 1500 school children into three groups according to their marks and found that the group with the best marks contained the largest

³ Patrick, George T. W. *What is the Mind?* The Macmillan Co., New York, 1929, p. 108.

⁴ Herrick, C. J. *The Thinking Machine*, p. 334. The University of Chicago Press, Chicago, 1929, 374 pp.

⁵ Bode, B. H. *How We Learn*. D. C. Heath and Co., Boston, 1940, p. 224.

number of children with height and weight above the average and that among those with the lowest marks the majority were below the average in these particulars. From these and earlier investigations, he concludes that there is a relationship between a child's physical development and his mental condition.

An American study⁶ offers somewhat similar ammunition for school health campaigns. The investigators, Nichols and Raubenheimer, made an intensive study of 136 girls in a Los Angeles high school who were from 11 to 33 pounds underweight and suffered as well from other physical handicaps. A third of these carried the regular high school routine. A third were enrolled in a special nutrition class, with midmorning milk, special instructions in nutrition, and a daily rest period, and were excused from all extra-school activities. The last third followed the same régime, and in addition kept a voluntary daily health record covering a twenty-four-hour schedule. The investigators concluded from the records that even girls badly handicapped by serious structural or functional defects would gain in weight on a restricted high school routine thus supplemented; that there was a general tendency for scholarship to improve as weight increased and general health improved, a tendency more definite in the younger girls than the older, and that the group most handicapped physically showed the greatest number of failing grades, a poorer quality of scholarship, and the least improvement in scholarship.

Keal⁷ concludes that "physical condition is one of the greatest factors affecting school success and the duration of school life" and "the correction of defects constitutes one of the most important problems in education."

According to a study of 1000 intellectually superior children made by Dr. L. M. Terman, they are not characterized by a deficiency of play and "there is no shred of evidence to support the widespread opinion that, typically, the intellectually precocious child is weak, undersized, or nervously unstable." The child is the father of the man, and the above is true of the physical character of the adult man (or woman) of genius.

The study of the relation of physique of school children to their educational achievement was recently made in the city of

⁶ *Journal of Juvenile Research*, Vol. xiv, No. 2, p. 114.

⁷ *School and Society*, September 1, 1928.

Manchester, England Only 2 out of 85 children of good scholarship were below the average in physique, while 68 out of 171 poor students, or nearly 40 per cent, were below the average in bodily measurements

There is a great deal of evidence of the close relationship between mental and physical aspects of bodily function ⁸

Modern Philosophy and Unity—It is the function of philosophy to inquire into concepts which profoundly affect the behavior of man It is not strange, therefore, that philosophers today discuss the problem Dewey in noting the persistence in modern times of this idea of a separate and disparate mind and body writes

"The idea persists that there is something materialistic about nature science and that morals are degraded by having anything seriously to do with material things If a sect should arise proclaiming that men ought to purify their lungs completely before they ever drew a breath it ought to win many adherents from professed moralists For the neglect of sciences that deal specifically with facts of the natural and social environment leads to a side-tracking of moral forces into an unreal privacy of an unreal self It is impossible to say how much of the remediable suffering of the world is due to the fact that physical science is looked upon as merely physical It is impossible to say how much of the unnecessary slavery of the world is due to the conception that moral issues can be settled within conscience or human sentiment apart from consistent study of facts and application of specific knowledge in industry, law and politics"⁹

The cultural lag in all areas of human life is a common observation in social science It is not strange, therefore, that the concept of dualism remains a potent force in American culture even *today* Schools are conducted with mental training as the goal and *mind* continues to possess a spurious supremacy over *body* This problem in our culture was discussed as follows

"If to work and sustain life were the sole purpose of living, then vocational excellence and mental training would be sufficient But it is only one function, and in comparison with the knowledge of

⁸ Williams, J F *Personal Hygiene Applied*, Seventh Edition, W B Saunders Co., Philadelphia 1941, pp 74-87.

⁹ Dewey, J *Human Nature and Conduct*, Henry Holt & Co., New York, 1922, pp 10-11

how to live, the knowledge of how to make a living seems mere buffoonery. Living is the central problem after all. It always has been, it is so to-day. Since we make our lives by the kind of experiences we have, then willy-nilly we have to live the lives we make. This is serious enough to cause even grown-ups to pause and to ask whether it is too late to do much about it. There is no complete escape from the results of past preferences. And since an individual's living is shaped by his experiences, he can only live the kind of life he desires by controlling the experiences he will have. Preferences for kinds of experiences are at the core of control over life. Many will remain slaves to the machine, but education's motto for every youth might well be *plus ultra*. However ambitious this vision may seem, we will always come to earth by facing the fact that language, mathematics, and tools must be provided. It is for the generalist to set minima in these matters. Due to his literary and scholastic bias and his limited kinesthetic appreciations, he requires help and guidance from the specialist. It may be helpful for the generalist and specialist to remember that direction without force is a weakness just as force without direction is a strength to be avoided. To secure the essentials education must balance these.¹⁰

It must not be supposed that denial of a purely inner life, separate from the world in which one lives, destroys human sentiment for professedly moral outcomes. There is as much spirituality in the world when one knows how endocrine glands function as when one remains ignorant of these activators of emotion. Reisner has phrased so well the modern view in this matter that he is quoted at length:

"The Christian tradition, it is true, placed a positive estimation upon the human individual, but it centered its regard upon a theoretically perfect aspect of the human being, namely, his rational nature, while placing a negative evaluation upon everything else which was a part of him. As has been said above, the newer and at present authoritative modes of describing man's mental life refuse to accept such a dualism as this. Our day sees the human individual as a unity. The physical frame of the person, the sustaining and governing physiological processes, the deep-seated, automatic, biological urges, the intellectual processes, emotional reverberations, practical activities, and moral aspirations,—all these are necessary

¹⁰ Williams, J. F. Some Essentials in Education, Teachers College Record, October, 1933, pp. 20-21.

and contributing parts of the organic whole which is a human personality

"The differences between the ways of viewing the human individual just stated are definitely reflected in contrasting systems of moral evaluation. The older outlook was much concerned with the salvation of the individual's soul, which was the eternal, immaterial, and spiritual part of him. The soul was the thing that mattered, and it was essentially abstracted from the complete circle of human self-expression. The whole man was at war with this special part of himself. It was thought that the soul's welfare was best assured by the suppression of other aspects of the whole individual. To save that soul was the chief objective of ecclesiastical administration and of man's striving on earth. The newer outlook regarding the ends to be achieved in connection with the individual life is very different. It sets up an ideal of wholeness, of efficient self-management, of happiness, and of rich and varied self-expression. The new concern is not so much with saving souls as with building happy, efficient, creative personalities."¹¹

Application of the Concept of Unity—Since all the pertinent scientific fields support the concept of organismic unity, it would appear that this idea would dominate educational practice. Such is far from true. Schools find it difficult to change traditional curricula and quite impossible to take a fresh start in a new direction. Although skills in a very wide variety of forms are tremendously needed today, there is more effort in schools to produce an "able critic of life" than to produce a skilled person. Skills in speech, in large body movements, in manual activities, in sport, in dance, in driving an automobile, in climbing stairs, in carrying bags, in walking, in manipulating cards in games, in public speaking, in singing, in playing musical instruments, and in numerous other forms are neglected or partially or badly taught because, although they comprise the great majority of life activities, they appear to be of the body. We continue in a scientific world the outworn practice of an ancient age, and like some recently westernized Chinese, we wear the garments of the Occident but keep our "pig-tails" under our hats. It is evident that progress in all education rests, in part, upon the full application in schools and social institutions of the doctrine of unity of mind and body.

¹¹ Reissner, E. H. *Faith in an Age of Fact*, Farrar and Rinehart, Inc., New York, 1937, pp. 74-75.

Work, Wealth, and Morals—The present American culture, developing rapidly out of a pioneer civilization, is frequently characterized by the foreign visitor as excessively devoted to work and the attainment of wealth. The good American life apparently is the very busy life in achieving a competence. Morals, which are properly concerned with health, efficiency, and happiness, conflict basically with a culture concerned with wealth. The average American's notion of work is thoroughly degenerate. The theory of man's essential laziness except under the lash of necessity led to the fiction of the economic man described by the political economy of the Nineteenth Century, and Alexander Hamilton's notion of state building led to our present mood. The doctrines of modern business lead not to happiness but to more factories, not to beauty and efficiency but to more mills, not to health but to more wheat and cotton. What do we do with the money made from the manufacture of automobiles? Build more factories to make more automobiles. The achievements of business are lauded as signs of progress and the success of financial enterprise is set up as a goal for youth to aim at, while the increase in nervous and mental diseases cries aloud that our concepts of work and wealth confuse values. A supreme value in contemporary American culture is making a living, but the supreme moral achievement of man is living.

This characteristic of American culture is well discussed by Dewey as follows.

"Yet the whole tendency of modern economic life has been to assume that consumption will take care of itself provided only production is grossly and intensely attended to. Making things is frantically accelerated, and every mechanical device used to swell the senseless bulk. As a result most workers find no replenishment, no renewal and growth of mind, no fulfilment in work. They labor to get mere means of later satisfaction. This when procured is isolated in turn from production and is reduced to a barren physical affair or a sensuous compensation for normal goods denied. Meantime the fatuity of severing production from consumption, from present enriching of life, is made evident by economic crises, by periods of unemployment, alternating with periods of exercise, work or 'over-production'. Production apart from fulfilment becomes purely a matter of quantity, for distinction, quality, is a

matter of present meaning. Esthetic elements being excluded, the mechanical reign. Production lacks criteria, one thing is better than another if it can be made faster or in greater mass. Leisure is not the nourishment of mind in work, nor a recreation, it is a feverish hurry for diversion, excitement, display, otherwise there is no leisure except a sodden torpor. Fatigue due for some to monotony and for others to overstrain in maintaining the pace is inevitable. Socially, the separation of production and consumption, means and ends, is the root of the most profound division of classes. Those who fix the 'ends' for production are in control, those who engage in isolated productive activity are the subject-class. But if the latter are oppressed the former are not truly free. Their consumptions are accidental ostentation and extravagance, not a normal consummation or fulfilment of activity. The remainder of their lives is spent in enslavement to keeping the machinery going at an increasingly rapid rate."¹²

The Joy of Work—The problems inherent in contemporary notions of work and wealth bear sharply upon the physical educator. They are real problems of the nation and demand his serious consideration. Modern factory work fails to offer opportunity for self-expression and self-realization in the activity itself. It is to be regretted that the joy in work that American craftsmen experienced two generations ago is today not possible. Today, too frequently, the industrial worker in shop and factory works only for the monetary return and as soon as he is free from the demands of the schedule he is eager to get away and then for him, if possible, comes the chance to do something that provides satisfaction. He works to earn money with the hope that in some way he can buy happiness. He has never had a philosophy to help him understand that happiness cannot be bought, for like beauty it comes from within and cannot be acquired from without. Stevenson is reported to have said, "One may travel over the whole world in the search for beauty and never find it unless he has it with him in his heart." Beauty and happiness are alike in this respect. Thus the happiness that the industrial worker finds is likely to be the kind catered to by professional and commercialized forms of recreation, and these, too frequently, have been associated with characteristic and lewd-some forms of vice.

¹² Dewey, J. *Op cit*, pp 271-272

To speak of joy of work when the whole process calling for imagination and creative impulse is the repetitive task of placing nuts on bolts, or throwing levers, or stacking trays, or watching for a thread to break in the rapid and phantasmagoric evolutions of a textile machine, is to call for that species of unbelief that greeted Dr. Eliot's address on the rights, duties, and privileges of the manual laborer. Cabot's analysis of the main features of this problem indicates clearly that the work of the industrial worker is lacking in those qualities so essential for self-expression and self-realization.

Although recreation has health benefits to bestow upon those who share activity in its wholesome forms, it is important to develop positive and constructive approaches to play for its own sake. The relation that now exists between work and recreation is such that workers regard their occupations as necessary means of earning a living and their recreations as desirable or necessary so that the main business of life—namely work—may be pursued. Work and play constitute an antithesis for these persons. Truly creative people do not distinguish between work and play, however. Work ought to have some of the joy that it once enjoyed and play ought to be strengthening and recreating. In a recent international congress, one committee considering the problem reported as follows:

"For the attaining of this end a complete reordering of working conditions as well as of recreation activities is necessary. Accordingly, every opportunity must be cultivated whereby the masses of the people may be restored to a vital contact with nature, not in the sense of weak and maudlin sentiment, but in the sense of a vital struggle with the eternally destructive and eternally creative forces of nature. The promotion and cultivation of genuine folk-art is one of the most important means to the realization of this aim."¹⁰

Physical Education and Broad Interests—The imperative necessity of viewing physical education as concerned with something more than a substitutional activity, an exercise program, forces itself continually upon us. Physical education must deal with the whole of life, with all the problems that in any way bear upon this old and ever-present one, the adjustment of the individual to the

¹⁰ World Congress for Leisure Time and Recreation, July, 1936, Hamburg, p. 40

environment and of the environment to the individual. It would appear that there are two aspects of the problem at once bearing upon the profession. One is the immediate recasting of the activity program to have some contribution to make in forming attitudes toward recreation and affording opportunities for habit-formation in the acquirement of serviceable skills. Here, then, the whole school problem must get away from the common notion that physical education is a disciplinary or perspiratory or postural activity. It is clearly for the purpose of helping to make effective the purpose of general education in terms of abundant living. The other aspect concerns the intimate blending of the school and community programs of recreation. Physical education must give its active and thoroughgoing support to the efforts to enrich the community facilities for leisure time uses. On the side of adult recreation, this means athletic fields, recreation centers, evening gymnasiums, tennis courts, golf courses, facilities for hiking, swimming, camping, and all other things which make for an abundant life. It would mean more than that. It would mean opportunities for the extension of one's personal experience, opportunities for learning, in night schools, extension courses, and the whole gamut of adult education. It would mean opportunities for participation in, *not just witnessing*, dramatics, musical contests, modern dance, and the whole range of allied movements.

It is apparent that the ideal of devotion to work must be altered and enriched by placing alongside another ideal although it may conflict with the development of the first. This other ideal would state that play belongs in the good life, that it requires no apologies for its followers, that its justifications are rooted deep in the basic nature of mankind, and buttressed by the kind of world in which he lives today.

It is, perhaps, not extravagant to say that the hunger for more abundant life, richer and fuller living, is opposed to the present idea of work that so widely prevails. Not that it is adverse to believing in work, but rather it resists mightily the idea of work that so overshadows life. Our language is spotted with phrases that deify work such as "the sweat of the brow" and this doctrine has been tied up to integrity, reliability, and fine personal qualities. But today such a saying is an anachronism in an industrial

ized society where 60 per cent of the population engage in occupations that never cause perspiration

The Fear of Play—Some who are concerned about the social good are afraid of this new mood for play and enriched curricula in schools, because for them the old adage, "Satan finds some mischief still for idle hands to do," has a mysterious significance. They hope to get social good by tiring people out and like the poet who wrote,

"If goodness lead him not, yet weariness
May toss him to my breast,"

they hope greatly from work, fatigue, and ennui

What seems almost essential is the development of an attitude of good humor, an unwillingness to take things too seriously "Life is real and life is earnest" sang the poet, but the seriousness of life is often nothing but the stupidity and dullness of grown-ups who mistake bile for seriousness and chronic indigestion for dignity and bearing The Puritanic tradition weighs heavily upon our emotional natures and presses down the gaiety that tends in all of us to crop out

Those who are proposing enriched curricula in the schools and improved opportunities for recreation, on the other hand, wish life to be rich and full *now*, full of meaning *now*, abundant *now*, beautiful *now* They are quite opposed to the doctrine that one should live a poor and mean life *now* so that in the future he may live a rich and full life The old idea that one should work hard *now* so that he may enjoy the good things of life later is both hoary and venerable, but it is also a hoax upon life as shown by the thousands that have so lived The newer view says in effect, "The only way to have abundant life in the future is to live abundantly *now* The only way to enjoy beauty tomorrow is to enjoy beauty today The only way to live at your fullest and best tomorrow, is to live that way today "

Part of our difficulty is due to our fear of play We have been told since the early days of childhood not to let the golden moments slip by when it would have been the part of wisdom to understand, as Barrie suggests, that they are golden only when we let them slip Without becoming lazy loafers we might learn that it is the slipping which makes them golden

The Tragedy of Things—Our modern world shrieks in a thousand ways for an answer to the pressing problems of an industrialized age. But the troubles are not all economic. They are terribly human. Listen to a portion of a letter written some years ago by a citizen of our present world to the *Atlantic Monthly*:

"Each and every morning, after an early and hurried breakfast, during which takes place a hectic discussion relative to the most satisfactory methods of transportation to our respective destinations, I conclude to walk (or run) to the station, while the children are motored in great haste to another station or direct to private schools. I take a seat in a tram beside another business man and appear as happy, important, and conventional as possible while I read the morning paper. It is vital that I turn eagerly to the financial page, because everybody else does. I am then submerged in a seething mass of human protoplasms which presently scatters to every conceivable corner of this North American city. And the fight is on.

"In a close, steam-heated office my day is given over to frantic pursuits which involve the dictation of letters, telephoning, calculations, and discussions. Both within the office and without, the noise is constant, the movement continual,—and the fight eternal. When the formality of the day's routine is over, I rush homeward by another route, having learned by telephone that I am to entrain and be met, or extract a car from some distant garage, or linger on a windy street corner to be collected by my wife or someone. Finally I reach home. I am tired, nervous, depleted, almost unclean. It is difficult to be agreeable. Casual conversation irritates me. My remarks annoy the family. I am useless, a burden, a poor investment. Sometimes a bath or a cocktail or both revivify me for a time, but usually, with great effort, I pull myself together and go in to dinner, resorting to neither. If the evening is to be spent at home, it is sure to be a brief one. If we 'go out,' I pray for decided inspiration or wild excitement. And, in either case, to-morrow I pay. My home is bulging with dusty books, my musical instruments are stored in the attic, my pen is used to write checks, my garden is full of weeds, and the thrushes come and go before I know it. The world is too much with us!"

Play and National Defense—When the storm broke around the courageous head of Eleanor Roosevelt over the appointment of a young dancer to a post in the Office of Civilian Defense, the

motives of the critics were varied. Some were inspired by political considerations, some were concerned with the desire to define more narrowly the function of civilian defense, but many editorials and cartoons in the press showed a complete lack of understanding of the place of play in the life of a nation. Some persons seem quite unable to distinguish between the careless indifference of Nero, fiddling while Rome burned, and wholesome play and dance in America while a small group of gallant men fight for life in Bataan. A happy hour in wholesome play or dance may bring one to the tasks ahead, refreshed and more competent to produce, but the critics could not see that truth. The fear of play runs so deep in our culture that morale, like morals, is supposed to develop through some inner conscience and quite apart from the consistent realities of human experience—the everyday actions and reactions through which people live.

In the light of conspicuous failures in living in our modern communities, physical education must become vitally interested in promoting play. This view of modern social needs is not afraid of work, but it wishes to place work in proper relation to the whole of life, and to see it as only one aspect of living. It believes that such orientation will help to make work lose something of that quality that for many leads to mere drudgery. At all events, it is skeptical of that mood which drives people to industrial, business, and commercial affairs, so preoccupied with the production of wealth that they have no time or temper to enjoy those things which are the sole reason for acquiring riches.

Democracy and Government.—After the first World War and particularly since certain European experiments in government, serious questions were raised in some quarters about democracy. These questions raise the issue between democracy and other forms of government and are epitomized in the query, "Can democracy cope successfully with the modern problems of an industrial age?" Since December 7, 1941, this question has been forgotten in the eagerness to mobilize the nation's power for winning the present war. The national quarrels over New Deal policies are in abeyance, and all strive to assemble the resources of the nation. In the first months of 1942, our forces had scarcely begun to fight and yet the spirit of cooperation and willingness to sacrifice runs high. The old freedoms in enterprise are gone and

not only soldiers but also civilians are coming under the regulations of a central authority

For the duration of the war at least there will be little discussion of the totalitarian theories of social organization. The vital examination of democratic philosophy and procedures which was carried on for ten years is put aside in a concerted effort to crush totalitarianism. If one believes that such centralization of authority and effort is essential in war and yet has faith in a return to democratic ways of life, then it is still important to discuss democratic values, to maintain the enthusiasm for liberty and freedom, and in time, to restore these to mankind.

The Personality—For a hundred years, between 1828 and 1929, there was a gradual, though perhaps needlessly slow growth in the development of democratic ideals. These were embodied in such phrases as, "the worth of the common man," "the rights of the common people," and "respect for personality." The force of this regard for personality is well shown in President Butler's address at the opening of the University's academic year, 1926-27, in which he said,

"In the whole world there is nothing more sacred than human personality, and the right of that personality to shape and to direct its own beliefs and its own conduct, subject only to being held responsible for results which infringe the like rights of others, is absolute and supreme. There is, and can be, no public interest apart from the interest of the individuals of whom the public is composed."¹⁴

Impatient for values, those who wish immediate social good, seek a monopoly of social power. Intolerant of the slow process of social evolution that is dependent upon education and inherent in the democratic process, they desire an ascendancy over the group that will enable them to do the thinking and planning for the mass who are to remain the docile instruments of their vision.

Contemporary American culture is marked therefore with sharply conflicting ideas of government, with a renewal of interest in the meaning of democracy, and with a rather critical examination of those political forms which oppose or attack its principles.

¹⁴ Butler, N. M. *Three Types of Mind*. Address delivered at the opening of the academic year of Columbia University, September 22, 1926.

Physical Education and Democratic Values—In these crucial days physical education, a field that will be used early by any authoritarian group that might attain power, must assay anew the democratic philosophy, and, if convinced, must harken to democratic ideals. The contrasts are sharp indeed in the authoritarian and democratic views of national organization. The marching groups, the regimented discipline, the external controls mark both the Fascistic and Communistic ideologies. With these belong mass drills, compulsory military service in peace time, the regimentation of peoples in thought and action.

It is interesting to note that even before the dastardly attack on Pearl Harbor, considerable agitation arose for regimentation of youth through physical education. Now, with war upon us, the cry for drills, calisthenics, for rigid gymnastics—the stupid exercising of muscles leaving the minds and emotions free to oppose or submit to authority—is heard everywhere. It has been difficult always for people to believe in democratic processes, it is more difficult to practice them.

The leader of a servile people could readily arrange for all the ordinary processes and activities of life. Such control could avoid largely the numerous irritations, inefficiencies, and futile efforts that mark a democracy. But it was this sort of control that the founders of America tried to escape from when they dared to leave their homes in Europe to build anew in a wild and unknown continent. The American dream¹⁵ is not compatible with such social order, however secure it may now appear. Since the powers for the development of a democratic social order come from the people themselves, it is delegated to representatives with the reservations that operate in the tenure of public officials. These powers enable the people to shift the emphases in the social order as new ideas, inventions, and industrial development present new problems, or as science discovers new facts, or as old superstitions are discarded. The democratic state may in 1860 allow human slavery and in another century provide old age pensions, workmen's compensation, and social security for black as well as white. But in a democracy the powers remain in the people.

Order and Social Control—The authoritarian leader maintains order, but in the democracy, also, social control and stability are

¹⁵ Adams, J. T. *Epic of America*, Little, Brown & Co., Boston, 1933.

likewise important. The order will be less marked in the latter, uniformity of response will be lacking often, but the hope for success in an orderly democratic society lies in being true to democratic ideals, in having faith in democratic processes, however slow and halting they may be. Therefore, all educational agencies in a democracy should seek to promote democratic technics, to achieve democratic processes in action, to foster democratic attitudes of shared decisions and independent judgments with responsibility for the effect of those decisions and judgments upon others.

Physical education in many of its activities contributes to order and social control through its socializing effects that accrue. Ross¹⁶ maintains that sociability is an element in social control.

The urge to go with your own kind, to stay with your own kind because it is more satisfying than to go with others that are queer to you, and that behave differently from the way you behave, leads to social amusement, play, games, dancing, feasting, and intercourse. These very activities tend to widen the range of one's kind, and in turn foster friendly interest, spontaneous helpfulness, and a sense of solidarity, all of which is conducive to the maintenance of order. School principals know the value of this influence in the maintenance of order in the school, and it was precisely the recognition of this prestige of games that led de Coubertin to revive the Olympic games in his interest for world peace.

"If sociability is not the basis of social order, it is still not without its services. It calls into being all manner of circles, clubs, and fraternal orders for social pleasure. The easy combination of Americans for any end whatever testifies to the absence of suspicion, jealousy, and ill will. Hence with us many things can be left to private action, which among less social men would devolve into coercive associations like the State."¹⁷

With sociability physical education has much to do. The recreational activities of its program, its festivals, pageants, pantomimes, games, and dancing are distinctly contributive to sociability. The testimony of playground teachers and experts on this point is very clear. Gangs, sectional animosities, community quarrels have been dissipated in the social activities of the playground.

¹⁶ Ross, E. A. *Social Control*, The Macmillan Co., New York, 1918, p. 22.

¹⁷ *Ibid.*, p. 22.

and community center. Again in promoting social control in a democratic state, physical education in its sports and games bulks large through its emphasis upon fair play.

Social Order and the Sense of Justice—When the players of a team believe that the decisions of a referee are fair, when the people of a community, state, or nation accept the decisions of judges and magistrates as fair and the acts of legislatures as just and wise, there exists in these groups a support for the social procedure which deals with conflicting interests. The sense of justice is an important attitude to develop in the maintenance of a democratic social order. It is an intellectual judgment out of experience. The sense of justice has its beginning in the early training of the child under conditions of standards of conduct in the home and among equals where each has his responsibilities. Its development continues through the schools. The discussion of this quality by Ross is quoted at length:

"In sport also the real nature of the 'fair play' feeling comes out clearly. Here it does not imply any reluctance to triumph or any slowness in taking advantage of success. But it does lead to an observance of those limits to competitive endeavor which are imposed by the 'rules of the game.' It leads rivals to forego advantages arising from accident or circumstances, to exercise the customary forbearances, and to confine their opposing efforts to the prescribed channels. In professional or business competition it works the same way. If my rival does not cheat, adulterate, or solicit on the street, neither will I do so. Especially does the sentiment of fair play prompt to the keeping of voluntary promises given for a consideration. The keeping of a parole or the repayment of a loan is the first dictate of the equity feeling, and the ideas of *duty* can easily be traced back to the idea of *debt*.

"The pure-justice-motive then crops up oftenest in the dealings of equals, in such fields as war, sport, trade, business, and politics."¹⁸

And again he writes:

"Is this bent toward even-dealing and abhorrence of foul play competent to account for the social order about us? I think not. We have seen that this trait prompts a man to observe those restraints and show those forbearances he finds in the conduct of his

¹⁸ Ross, E. A. *Loc. cit.*, p. 27.

competitors. Hence, in the struggles that go on in society, the love of fair play will lead him to conform to the rules obeyed by all his rivals, that is, *it will tend to generalize forbearances and to complete an order already 'set up and running'*. But it cannot originate mutual restraints, it knows nothing of the group interest to which private interests must bow.

"There must always be other forces to build up from the bottom. This is why on the *Mayflower*, as well as by the Sacramento, *the making of law is ever the first care of a new community*. Reasonable rules once set up, the just-minded hasten to obey them, because now each knows what forbearances he can look for in his rivals. Thus is formed a law-abiding disposition, the birthright of all good laws, but soon lost if they are not enforced. But the bare predilection for justice does not, of itself, give us the secret of a perfected social order."¹⁹

As regards sense of justice, activities of physical education under capable leadership offer the richest opportunity in the school for education in forbearances, fairness, generosity, vital elements in this sense. What professional or occupational group has, even remotely, the influence to be exerted by the well-trained physical educator? The ideals of the ministry are directed too often toward the life to come, a matter so complicated with legalistic and ceremonial forms that it is not of immediate concern for group protection and special needs. The ideals of business are, quite generally, maximum production of wealth to the square mile. Trade unionism, concerned with economic rewards for its members, interprets social welfare, all too often, in terms of class warfare. The only group in the world concerned with teaching the basis of a sense of justice is that represented in physical education.²⁰ In this field, under proper conditions, the teaching is continually "Play Fair," "Be Honest," "Be Square." The gymnasium and playground are laboratories where these standards may continually be illustrated in the face of the instinctive impulse to personal and selfish action.

¹⁹ Ross, E. A. *Loc. cit.*, pp. 34, 35.

²⁰ The argument for education in Sportsmanship by Captain Percy Creed condemns the statesmen and diplomats of the world and finds in games, and their possible concomitant values, the only basis available for world order and control. The activities of physical education may however be to strengthen tyranny and despotism. See the publication of the Sportsmanship Brotherhood, Inc., New York City.

Laissez Faire and Intercollegiate Sport—Any thoughtful student of social forces in American life could have prophesied a generation ago the trend in development that college athletics would take. Sport is a part of the culture as definitely and as fully as working conditions, clothing, language, tools, and machines. The ideals of individual liberty are variously realized and in politics and economics the doctrine of *laissez faire* and rugged individualism widely prevailed. A culture which permitted the amassing of great personal fortunes with widespread poverty and impaired opportunity is precisely the culture which would give free play to the notions of graduate managers for the achievement of athletic supremacy. Child labor in coal mines, women in textile mills, sweat shops in the clothing trade are in type and quality of social behavior comparable to proselyting, scouting, professionalism and commercialism in sport. They are the natural products of a way of thinking, a mood and a manner of acting. It is obvious that the oft-expressed desire to develop practices of English sport in the American culture denies the very basis upon which English sport rests. It is a cultural expression. It flowers from the traditions, customs and ways of behaving that compose English character and English life.

Sport in the American scene is as truly American as mass production. Even the report²¹ of the Carnegie Foundation for the Advancement of Teaching, thorough, comprehensive, and generally fair, had no significant effect upon athletic practice. Today, little more than ten years after its publication, subsidization of athletes is more open, and probably more general. Intercollegiate sport reflects the ideas, standards, and behavior of the culture in which it exists. *Laissez faire* in economics and rugged individualism in intercollegiate sport are products of the time and place.

Competition and Cooperation—The failures of *laissez faire* are recognized. Unbridled freedom is deplored and ruggedness of action that finds no virtue in other than individual gain is everywhere condemned. Competition as a way of behaving has therefore been attacked and cooperation as a way of behaving correspondingly attains merit. These two qualities need to be examined in some detail.

Competition in Games and in Business—The tendency to classify

²¹ Bulletin No. 23. Carnegie Foundation for the Advancement of Teaching, 1929.

all forms of competitive effort in a single category leads to error and denies the intrinsic quality of experience Lindeman²² observes the matter accurately when he writes, "Competition in games is, or may be, always a striving for excellence, competition in the realm of economics invariably becomes a striving after more things, or more, power over others" To view competition in games as either in fact or in necessity, the deadly parallel to competition in business is to indulge a bias and to ignore the facts

The ability to see in social phenomena ways of future action or kinds of behavior that have implications for education is a constructive approach to planning for educational outcomes To discern in examples of competitive effort and in cooperative performance the essential principles that might be captured for educational method and made, through teaching of children, to appear as ways of behaving in the lives of men and women is the task of an alert and professional education On the contrary, the adoption of slogans and the uncritical acceptance of terms portray a wishful thinking We may announce that we are for cooperation and against competition for a variety of reasons, but it is important to remember that terms become significant not by designation but because of the fact that vital phenomena are described To place competition and cooperation as terms at the extremes of human behavior is the procedure of the propagandist, but the phenomena require a more constructive analysis Moreover, careful scrutiny of the matter will reveal that these terms stand for kinds of behaving of enormous range and that wide variations exist in competitive effort and in cooperative performance

The Nature of Competition—By definition competition is an act of seeking what another is endeavoring to gain at the same time and cooperation is an act of working jointly with others to a common end Examples of these two forms of behavior are legion

There may be competition by two or more men for the same girl, two or more boys in the same race, two or more railroads for the same traffic, two or more religions for the same soul These may manifest the finest qualities of the human spirit in fairness, in tested excellence, in freedom of choice, in purpose to deserve, in service to mankind But these qualities exist in persons

²² Lindeman, E C *Planned Society Yesterday, Today, and Tomorrow* Edited by Findlay Mackenzie Prentice-Hall, New York, 1937, p 622

and not in methods, they arise in people who live and therefore reflect action and reaction, the full force of the life process. It is possible to have a world in which men do not compete for a woman. In China parents select the mates for their children. Freedom of choice, purpose to deserve do not arise as qualities out of such a situation. It might be possible to have a world in which boys would not run a race, religions would not compete for the same soul, and men would always step aside for others so that public offices would be never filled, but neither historical experience nor present life knows such a world.

There are other examples of competition. There is competition that seeks and obtains unfair trade practices, special privileges in tariffs, subsidies, bonuses or bounties for particular groups, that achieves exploitation of performers for commercial gains, that elevates self through destruction of another, that cooperates with others to "box" an opponent in a race, that uses brass knuckles or emery dust, that leads to corruption of officials, that lies, cheats, and destroys. These qualities exist, however, in the behavior of persons, they are not inherent in method. They arise in actions and reactions of persons living in a world of varying standards and reflect, therefore, the values in life that operate in society, that is, in individuals.

These latter examples are not any more truly the characteristic or unique product of competition than are the former. The products of competitive effort may range from a fine sense of fair play to corruption of officials, from purpose to deserve to purpose to deceive, from tested excellence to boxing an opponent, from the golfer counting all his strokes to the one who makes an alibi for poor performance.

The Nature of Cooperation—There are many examples of cooperative effort. There may be the cooperation of a community in selecting good men for office or cooperation of a political party for power, plunder and privilege, cooperation of persons for schools, libraries, parks and playgrounds or cooperation of persons for elimination of so-called "frills", cooperation of educational institutions for friendly, courteous, generous, athletic contests or cooperation of educational institutions to control free speech, free inquiry, and independent action.²³

²³ Mann, T. *An Exchange of Letters*, Knopf, New York, 1937.

These variations in cooperative performance are not inherent in the thing called cooperation, but represent qualitative attributes of individuals. A method of cooperation in itself is not bound to produce either fine or baleful results, these depend upon the ends that are served.

By a fallacious analysis, competition may be made to appear socially bad and cooperation socially good.²⁴ To designate all that is evil in competition as the litter it is bound to breed, and all that is excellent in cooperation as the fair flower of its process is neither accurate nor in accord with the facts.

The Origin of These Qualities—With respect to origins, both kinds of behaving, competitive and cooperative, find their drives in biologic traits. Thorndike writes,

"Every human being—tends by original nature to arrive at a status of mastery or submission toward every other human being and even under the more intelligent customs of civilized life somewhat of the tendency persists in many men."²⁵

All except the most fervid environmentalists acknowledge this trait in original nature. Regarding cooperation there is less evidence to support its biological origin, but Zuckerman²⁶ reports that it exists in the social life of monkeys and apes.

This possible biological origin of these ways of behaving indicates that they are not the product of a particular social system. Moreover, there is no evidence that these traits have produced particular social organizations. Fascistic and communistic states demand cooperation with the forces in power, but the abdication of individual intelligent cooperation and enthronement of slavish obedience are an essential condition of dictatorial government. Social life makes any individual peculiarly what he is. Fascism and communism produce in Italy, Germany and Russia the kind of citizens that the dictatorships demand. The halting and often confused democracy in American life produces Americans with the qualities and ways of behaving that are the product of action and reaction in American society. Educated men and women in Amer-

²⁴ Rogers, F. R. Competition and/or Cooperation, *Mind and Body*, February, 1936, pp. 281-289.

²⁵ Thorndike, E. H. *The Original Nature of Man*, p. 93.

²⁶ Zuckerman, S. *The Social Life of the Monkeys and Apes*, p. 294.

ica do not openly snatch for things nor cry for what they want. Approved social behavior does not sanction slugging an opponent in a football game. There are, however, behaviors that all thoughtful persons condemn but only the naive theorist would suppose that behavior in sport was to be interpreted apart from the ideas, customs and traditions of the time and place. Much of amateur athletics today corresponds to rugged individualism in economics or to militant nationalism abroad and has about the same justification. But to observe that practices in competitive athletics may emulate the jungle standards of the market place is quite different from declaring that jungle standards inherently belong with any particular social organization.

The Influence of Education—Human traits may be accentuated or weakened by education and social experience. Tendencies to certain kinds of behavior are altered by the actions and reactions of the individual in various situations. The hope of public education in character development rests upon this basis. Therefore, it is the practice among enlightened social groups to weaken by various forms of disapproval the kind of behaving that is selfish, against group welfare, and subversive to social good. And likewise to strengthen those responses of behavior that are highly regarded. Those who consider all competition as antisocial are disposed to see in cooperation the panacea for a socially disturbed world and in this respect are like those socialists who contend

“ that the collective ownership of the means of production will produce a ‘classless’ state, inhabited by a race of men who are purged of acquisitiveness and aggression ”²⁷

But for Americans generally social good has no reality except in terms of the individuals composing the group. The concept of a state, outside of, beyond, and above the persons that comprise its citizenry is for Americans a strange doctrine. Although gradually over some sixty years the ideology of collectivism has gained adherents in American life, there remains a strong belief in the importance, worth, and expectation of individual personality. This regard for the individual rather than for a state explains much of the political philosophy of democracy with its well-known

²⁷ Lippmann, W. *The Good Society*, Little, Brown & Co., Boston, 1937, pp. 78-88.

phrases all men are born free and equal, the rights of the common man, individual liberty, freedom of speech.

Interest in the individual personality, rather than regimentation for a state has dominated American education since the beginning. And the rôle of competitive activities in the development of the individual is widely appreciated. In the early years of childhood, play is largely cooperative, but before the years reach two figures, the question is, as Lee writes, "Who is the better man, or the greater or more endurable in some respects?"²⁸ This is the beginning of self-realization and stronger than the desire to impress others is the child's impelling drive to test himself. To identify himself, to discover his own reality—this is one sure outcome of the competitive situation. Even so severe a critic of competition as Bertrand Russell writes,

"Competition and cooperation are both natural human activities and it is difficult to suppress competition completely without destroying individuality."²⁹

Absurd Interpretations—Critics of competitive activity at times attempt to escape from the dilemma that confronts them when examples of fine competitive behavior occur. Rogers writes that the key to the problem is the ability to distinguish between competition and opposition.

"Opposition is the purposeful meeting of forces, and is of the essence of football, tennis, etc. But opposition—the trying of conflicting powers—is possible without desire to humiliate opponents, which is competition. Overcoming of obstacles is the acme of male existence and the source and builder of many qualities, but opposition does not become competition until the obstacle is the *ego* of a human opponent."³⁰

It scarcely seems necessary to comment upon this strange statement. Sportsmen do not desire to humiliate opponents. The countless numbers of competitive activities in schools today are not run to humiliate opponents. Small, cruel boys and some adults who

²⁸ Lee, J. *Play in Education*. By permission of The Macmillan Co., Publishers, New York, 1916, p. 186.

²⁹ Russell, B. *Education and the Modern World*, W. W. Norton and Co., New York, 1932, p. 237.

³⁰ Rogers, F. R. *Op cit*, p. 288.

are still growing up act in this way, but the code of fair endeavor is built upon the standard expression, "May the better man win." For those who lose, there is no humiliation unless a faulty education has taught them to expect always to be right and never to lose. Educational policy for a general practice, however, cannot be derived from the limitations of emotionally abnormal children. Such children should have the supervision in activities that their special problems require, but they are the special cases that illustrate the principle of individual differences. Therefore, children who are *humiliated* when their team loses need special care exactly as others do who are timid, shy, secretive, unduly sensitive, fearful, and vain.

To set a standard of social activity which is based upon the abnormal response of a player who is humiliated when he loses in games would correspond to establishing a diet based upon carious teeth and inability to masticate, or a standard of honesty based upon the behavior of a kleptomaniac.

Struggle Important—Administrative measures in education must take in account the various abilities and needs of children, but the drive behind all education for social ends must come from the philosophy that portrays the goals and gives meaning to the process. There are many reasons for believing that the good life is characterized by struggle. Struggle to realize self gives some fiber to the personality that alone makes life worth living. If competition of all kinds could be eliminated in life, what sort of watery human being would result? If this sort of noncompetitive life were to ensue, then doubtless we are at the climax of civilization and less can be said for its continuance than many of us suppose.

William James some years ago in a famous lecture to students commented on what makes a life significant. He wrote,

"A few summers ago I spent a happy week at the famous Assembly Grounds on the border of Chautauqua Lake. The moment one treads that sacred enclosure, one feels one's self in an atmosphere of success. Sobriety and industry, intelligence and goodness, orderliness and ideality, prosperity and cheerfulness, pervade the air. It is a serious and studious picnic on a gigantic scale. Here you have a town of many thousands of inhabitants, beautifully laid out in the forest and drained, and equipped with means for satisfying all the necessary lower and most of the superfluous higher

wants of man You have a first-class college in full blast You have magnificent music—a chorus of seven hundred voices, with possibly the most perfect open-air auditorium in the world . You have kindergartens and model secondary schools You have general religious services and special club-houses for the several sects You have perpetually running soda-water fountains, and daily popular lectures by distinguished men You have the best of company, and *yet no effort* You have no zymotic diseases, no poverty, no drunkenness, no crime, no police You have culture, you have kindness, you have cheapness, you have equality, you have the best fruits of what mankind has fought and bled and striven for under the name of civilization for centuries You have, in short, a foretaste of what human society might be, were it all in the light, with no suffering and no dark corners

"I went in curiosity for a day I stayed for a week, held spell-bound by the charm and ease of everything, by the middle-class paradise, without a sm, without a victim, without a blot, without a tear

"And yet what was my own astonishment, on emerging into the dark and wicked world again, to catch myself quite unexpectedly and involuntarily saying 'Ouf! What a relief! Now for something primordial and savage, even though it were as bad as an Armenian massacre, to set the balance straight again This order is too tame, this culture too second-rate, this goodness too uninspiring This human drama without a villain or a pang this community so refined that ice-cream soda-water is the utmost offering it can make to the brute animal in man, this city simmering in the tepid lake-side sun, this atrocious harmlessness of all things,—I cannot abide with them Let me take my chances again in the big outside worldly wilderness with all its sins and sufferings There are the heights and depths, the precipices and the steep ideals, the gleams of the awful and the infinite, and there is more hope and help a thousand times than in this dead level and quintessence of every mediocrity'"³¹

The Combined Biological and Social Inheritance—Over the years and through them, in countless generations, the protoplasmic materials of man have been played upon by two sets of forces One comprises that complex group of influences represented in materials themselves, driving the individual to engage in certain activities The action that occurs reacts upon the participating

³¹ James, W Talks to Teachers on Psychology and to Students on Some of Life's Ideals, Henry Holt & Co., New York, 1900, pp 268-271

materials The other is that highly varied group of agencies represented by the word "environment" These two forces are commonly designated as the biologic and social inheritance of man

Whether in the realm of action or in the life of ideas, these forces ceaselessly operate Moreover, their effects are distributed throughout the organism, although structure, and hence function, may be altered more in one area than another It is generally understood that the upright position of man that resulted in freeing the upper extremities, and in its eventual complex development, is an example of a marked change in the materials of man, but it is not always appreciated that it was the development of the hand that made possible the progress of what is called "mind"

From this point of view, then, the life of ideas and the realm of activities are two ways in which the individual responds to the play of forces upon him In many respects, the latter is more important than the former because some things can be known only through activity Obviously, also, experience precedes all knowledge Indeed, understanding and experience are so intertwined that for many years the dictum, *Learn by doing*, has had wide theoretical acceptance

The full force of this view can be given in a simple illustration One might read all that had ever been written about running, might talk with the best runners that live today, might have studied carefully postures of running form, but this simple activity would be essentially unknown in its unique and intrinsic qualities until one ran The rhythmic flow of the muscles in producing the movement, the accelerated breathing, the heightened activity of all organic functions, the rapid locomotion, the kinesthesia—these are the essence of the experience and can never be acquired vicariously In this sense, then, one can only know man by engaging in his activities

The activities of man have accumulated, through the ages, highly complex and richly varied meanings With respect to the biologic forces that have played upon him these accumulations have universal character Physiology knows no national boundary lines Running has the same effects upon the Chinese that it has upon the European, and the Filipino boy has the same urge to run and throw, to jump and climb, to hang and lift, that impels an American child to do these things Costume, custom, climate,

diet, religion, and other influences—roughly classed as social—may alter the form of the running or place restrictions upon climbing or jumping, but throughout history the immemorial activities of man have appeared in some form among all races, in all climes, and under all conditions of life

Social Forces Develop Different Traits and Ideas.—Basically then, physical education in its various activities represents in part this biologic drive to engage in movement. Inevitably there accrue identical effects in growth and development as individuals engage in the same or similar movements. It would be complete failure to understand the influences wrought in human behavior by the play of social forces in man's activities if one were to regard movement as of no moment outside the boundaries of kinesiology or physiology. Some of the less significant social forces are revealed in the walk of the Bedouin, the carriage of the Polynesian woman, the posture of the American cowboy as they reflect the direct influence of costume, or occupation, or both, upon their movements. More significant social forces, however, are those leading to wars, to reorganizations of governments, to struggles for markets and raw materials, and to new interpretations of the relation of the individual to the state. Any attempt to examine the sociological foundations of these days must take cognizance of the tremendous forces now playing upon the biological materials of man. The effect of these upon physical education procedure is not always clear. Some important aspects, however, are apparent.

The beliefs of peoples regarding human relations, their fears of the unknown, their superstitions about the future and past, their marriage customs, their festival and carnival practices are swathed in movements of dance and pantomime. The Englishman who played at Repulse Bay in Hong Kong, the American teaching baseball to Igorot hillmen, the Scotch promoting curling clubs in Canada and the United States—all reflect more than the urge to engage in sport. These effects are truly particular and lack the universal character of biologic agencies. Although the realm of movement and the life of ideas are closely related organically they have their own particular domiciles in the particular groups in which they arise. Biologically all men are brothers, socially they are as unlike as their customs and beliefs make them. Blood pressure draws no national boundary lines, but the meaning of a

dance to different national groups or the regard of some for a particular sport separates men whose muscles respond to the same kind of nerve impulse, whose glands produce identical secretions, and whose blood flows in arteries and veins. The universal character of man's biology and the particular quality of his social inheritance afford at once a challenge and an opportunity. Fortunately, the promotion of international good will is not dependent upon overcoming some strange arrangement of nature, but solely concerned with appreciation and understanding of the traits, needs, interests, and ideas of other peoples.

Each Age Has Its Own Values—Physical education in the United States, however degenerate its forms may appear to its critics, is nevertheless a vital aspect of biologic and social life. No one can understand a nation without knowing competently something of its play, dramatic, dance, and sport activities. In all lands, however, physical education goes back, for its biologic origins, to common sources. This is revealed in the vast series of changes that culminated in man's present form and function. The social setting, particular rather than universal in character, is far more recent, although still ancient. A real acquaintance with the ideas, purposes, and procedures that have marked physical education sends roots of sympathy deep into the history of many peoples. It may be truly said that organized physical education was born some twenty-three centuries ago in a civilization marked by intellect and understanding. There on the shores of the Aegean Sea it grew into a sturdy force to nourish the citizens of Greek City States. But its course was not to be one splendid series of progressive development. Fifteen centuries later students came from all parts of Europe to sit at the feet of Abelard. Physical education was forgotten in the spell of rhetoric and philosophy. These two periods carry their load of ideas, however. When we think of Athens, we think of the Parthenon, of Socrates, of Plato and Aristotle, and see in imagination that parade of finely educated youth from the palaestra into Greek life. When we think of Abelard, we think of the Middle Ages, of popes and emperors fighting for power, of feudalism, of peasants and poverty, and nothing that happened in Greece seems to have a place in the twelfth century in Europe. The fact is, of course, that a wholly different body of ideas swayed men's minds and what seemed vital to the guests of

the palaestra counted for nothing in the contemplation of those in the monasteries. Each age has its own values, its own beacon lights set upon the hill, its own dreams and aspirations.

Social Inheritance in Physical Education—Ancient Greek life and the ascetic ideal express two periods in human history which have colored all of western civilization. Physical education has felt their full influence. Other forces also have shaped its present state. Physical education, ranging widely throughout the life of all peoples, bears the imprint of many cultures upon it. The examples of this are many. Everywhere, in all modern educational endeavors, Vittorino da Feltre lives today in the impulse to educate the whole child. Every gymnasium is a reflection of Nachteggall, who built the first one in modern times, and every set of parallel bars, no matter how rejected and despised today, must lift themselves somewhat proudly because of the defense given to them by the great physiologist Du Bois-Reymond. Juvenal's famous phrase, *mens sana in corpore sano*, is only a little better known than Rousseau's aphorism, "The weaker the body, the more it commands, the stronger it is, the better it obeys." Richard Mulcaster, working hard for little pay at the Merchant Taylor's School in London never founded a system of physical education, but he with others like Mercurialis, Chas. Amoros, and Basedow helped to lift up educational endeavor from narrow concepts to larger ones. The great ones of the field, men like Guts Muths, Jahn, and Ling in Europe, and their fervid disciples who came to America are never to be forgotten. Whatever one may wish to say about systems of physical education in America, and surely all would speak kindly of the dead, they nevertheless were representative of human eagerness for man's improvement and they reflected the ideas, traits, characteristics, and interests of other nations.

Opportunities to Utilize Social Backgrounds—In actual practice the teaching of physical education in the schools develops the life of ideas through the activities carried on. There is, of course, real mental content in numerous motor activities. Much of this is technical in character, but for those interested in the promotion of international understanding, there will be found wide areas that yield appreciation of other peoples. It is not contended that teachers make full use of the materials available or that all teachers are competent to lead in development of appreciation and understand-

ing of others Social implications are not readily or widely taught But the opportunity is inherent in the rich social background of physical education experience It will be sufficient, perhaps, to cite examples to indicate the force of the argument and to suggest lines of attack that may be made by those who are interested

Social Inheritance in the Dance—Many persons believe that the dance offers the most outstanding material for portraying the customs, traits, and interests of other peoples Among these, perhaps, Havelock Ellis most adequately expresses the opinion He writes.

"If we are indifferent to the art of dancing, we have failed to understand not merely the supreme manifestations of physical life, but also the supreme symbol of spiritual life"²²

"Dancing is the primitive expression alike of religion and of love, is intimately entwined with all human tradition of war, of labor, of pleasure, of education For the solemn occasions of life, for bridals and for funerals, for seed-time and harvest, for war and for peace, for all these things there were fitting dances"²²

When Cecil Sharp introduced English Country Dances in America and stimulated widely the interest in Sword Dances and Morris Dances, he helped American youth to learn more than steps And yet it is in the "steps" that one gains what verbalization can never give In these days of social distress, the "Merrie England" of Shakespeare seems strangely removed, but one who could be merry during the reign of Elizabeth found the secret, not in a philosophy of collectivism, nor in the harsh realities of earning a living, but, doubtless, in the Ruggadoon or some dance where there was "set and turn single"

The Sword Dances of Scotland, danced years ago on the eve of battle, find their counterparts in Ireland, and even in the far-off Caucasus In the latter the *Lezginka* is a solo dance of wild beauty This sort of activity does not portray the character of a people as effectively as the *Chumak* (the Ukrainian Merchant), the *Odzemok* (the Slovakian Shepherd), or the *Flap* (the Dutch Fisherman), but, as in all character dances, attitudes toward life, interests and traits are shown. Something of the superficiality of court life and its effeminate and rococo character in the fifteenth and sixteenth

²² Ellis, H. *The Dance of Life*, Houghton Mifflin Co., Boston, 1923, pp 86-87

centuries are revealed as one dances a *Branle* of Poitou, and then a *Minuet* that grew out of it

The dances of love, courtship, and marriage dramatize not only sex but also ways of responding to romantic situations. The *Daldans* and the *Vingakersdans* of Sweden, the *Zalman* of Czechoslovakia, the *Polstertanz* of Austria present a manner of courtship that is quite foreign to American custom

One movement outside the schools that is using dance in socialization in America as well as in promotion of international understanding is the Folk Festival Council of New York. Through this agency various nationals are brought together to dance their own dances, to see those of other groups, and to mingle together. Grosse insists that it is the dance that socialized man, granted this, one wonders if the lack of a national German dance explains the great stress and pressure that have seemed necessary on two occasions to secure national unity. The *Seguidilla* of Spain, varying somewhat from province to province, remains nevertheless as truly national as the Hungarian *Czardas*, the English *Hornpipe*, the Polish *Obertass*, or the Russian *Cossack* dance.

The dance, whether brought to us from Sweden, Ireland or Scotland, from Russia, Hungary, or Java, has its wealth of ideas, its ceremonials rich with meaning, its movement, music, and customs that tell a story of man's response to the forces that play upon him. Perhaps in dance more than in other activities, spectators may have significant vicarious experience. Havelock Ellis writes

"Even if we are not ourselves dancers, but merely the spectators of the dance, we are still—according to that Lappsian doctrine of *Empföhlung* or 'empathy,' by Groos termed the 'play of inner imitation'—which here, at all events, we may accept as true—feeling ourselves in the dancer who is manifesting and expressing the latent impulses of our own being."³⁵

Social Inheritance in Sports and Games—In sports and games the field of physical education is greatly indebted to foreign sources, particularly English. But early origins are Greek and Roman. The athletic aspects of the four great festivals—the *Olympic* held at Olympia, the *Pythia* at Delphi, the *Nemea* in

³⁵ Ellis, H. *Op cit.*, p. 66

Argolis, and the *Isthmia* at Corinth—have been revived in the modern Olympic games, but children in the grades engaged in the study of Greek civilization may have their own Olympic games in the gymnasium of the modern school, and later in college years may have a truly meaningful educational experience in the contest in music, poetry, dance, and athletics, such as that conducted annually by the freshman and sophomore classes of Barnard College.

Not even remotely, in the thoughtless opinion of some persons, are such experiences related to international understanding, but wherever there is a disposition to appreciate and to value the social practices of other peoples, worthwhile gains in this respect must accrue. There may well be some doubt about the gains for international peace that flow from the Olympic Games as now conducted. The arguments about amateur status, the intense competition in events that have to be decided by human judgment, have been and are likely to continue, in the present state of affairs, to be foci around which collect rather readily expressions of national pride and acts revealing international animosities. The hope of de Coubertin seems lost in the fierce desire to attain national supremacy and the promising outcomes for even the athletes themselves are placed in jeopardy by the strong nationalism that everywhere prevails. Little in these international affairs can be achieved in the promotion of understanding until there is a change in the mood and manner in which they are conducted. Like other activities, however, they reveal national traits and characteristics.

Summary.—The following points present the main points of this chapter.

- 1 Man's behavior is a product of his own nature and the social forces which ceaselessly play upon him. There is a continuity of man and society.

- 2 The biological forces in man are the same in all men. Different behavior is the reflection of natural customs, traditions and beliefs.

- 3 Customs change very slowly. Fear has always been a powerful incentive in behavior. Behavior based upon facts is better than behavior based upon superstition.

- 4 The separate body and mind concept is one of the most

restricting traditional views of this generation. Although living in a world of science which teaches unity of the organism and environment, we continue educational practices that seek "to train the mind."

5 The evidence of organismic unity is overwhelming

6 Philosophy emphasizes unity

7 The prevailing philosophy of work presents important implications for physical education

8 Physical education must deal with the whole of life as the experiences of man have meaning for its objectives and activities

9 Since joy in work so often is lacking, the modern world demands a joyous recreative life

10 Physical education should promote broad interests

11 Physical education teaches that play *belongs* in the good life

12 The tragedy of things is enacted often in the lives of those who do not play

13 Good play builds strength, courage, and endurance in people—and people make the nation

14 The idea of a democracy must be maintained even during the necessary dictatorial processes of war government

15 The insidious dangers of dictatorial methods are always present in a society

16 Physical education will always be used by those seeking to promote regimented values

17 Whatever the form that the government of the United States takes—Fascistic or Communist—or whatever changes take place in its democratic philosophy and processes, physical education will be always prominent

18 Sociability is an important factor in social control

19 Physical education in its standards of behavior teaches fair play. About the only decent standard operating between groups is the sportsmanship code with its rules kept and its regard for others

20 American sport reflects American life. Sport with other social forces over a long period of time may modify American life

21 Not all competition is socially undesirable

22 Social good has no reality except in terms of the individuals who compose the group. Sportsmen do not desire to humiliate their opponents

23 Educational policy, procedures, and methods cannot be soundly based upon the limitations of emotionally abnormal persons

24 A rich social inheritance is available in dance, in sports and games

QUESTIONS

1 What is the relation of man to his environment? What are some of the elements present in human behavior at all times?

2 What are human institutions? How are they formed?

3 What is implied in the statement that our ancestors lived in the Middle Ages?

4 What is a calamity? Why is behavior important to society?

5 Why is the destruction of the *mind-body* concept important to physical education? To all education?

6 In what respects do we neglect *body* in all education of youth?

7 What is the evidence that man is a unified organism?

8 What conflict does Dewey describe between some views of science and morals?

9 Why has man been at war with parts of himself?

10 What skills might be desirable for all educated persons?

11 Why are work and morals properly of interest to physical education?

12 Can there be joy in work like joy in play? If so what are the conditions?

13 Is it reasonable and proper for physical education teachers to urge athletes to pay more attention to studies, to practice less, and to give time to other interests?

14 What are old forms of play? Why do we fear them?

15 Why is play an antidote for the boredom of things?

16 Why did the public criticize Eleanor Roosevelt for promoting a program of dance through the Office of Civilian Defense?

17 Why is it important to discuss democratic values and processes during war time?

18 Why is respect for personality so important in a democracy?

19 Why does physical education lend itself to the development of social and political ideas?

20 What is sociability? How is it promoted?

21 What is a sense of justice? How is it developed?

22 How did intercollegiate athletics reflect the rugged individualism of the past thirty years?

23 What distinctions are to be made between competition and cooperation? Why do both operate in situations? What are other factors behind them?

24 What is meant by saying that physical education knows no national boundaries?

25. What forms of physical education may be used to teach social backgrounds?

26 What social inheritance do we have in dance? In sports and games?

REFERENCE READINGS

- 1 Bode, B H Democracy as a Way of Life The Macmillan Co, New York, 1937
- 2 Boyd, W and Ogilvie, W The Challenge of Leisure New Education Fellowship, London, 1936
- 3 Counts, G H The American Road to Culture John Day, New York, 1930
- 4 Dewey, J Human Nature and Conduct Henry Holt & Co, New York, 1922
- 5 Durant, H The Problem of Leisure Routledge and Sons, Ltd, London, 1938
- 6 Herrick, C J The Thinking Machine, The University of Chicago Press, Chicago, 1929
- 7 Jacks, L P The Education of the Whole Man Harper and Brothers, New York, 1931
- 8 MacIver, R M Society Farrar and Rinehart, Inc, New York, 1937
- 9 Ogburn, W F Recent Social Trends in the United States 2 vol McGraw-Hill Book Co, New York, 1933
- 10 Patrick, G T W What is Mind? The Macmillan Co, New York, 1929

THE HISTORIC RÔLE OF PHYSICAL EDUCATION IN THE PROBLEM OF ADJUSTMENT TO LIFE

"If I were talking to an athlete, I should say, show me your shoulders, and then he might say here are my Halteres I reply, Slave, I am not inquiring about this, but how you exercise pursuit and avoidance, desire and aversion, how you design, and purpose, and prepare yourself, whether conformably to nature or not If conformably, give me evidence of it, and I will say you are making progress"—The Discourses of Epictetus

CHAPTER VI

The Historic Rôle of Physical Education in the Problem of Adjustment to Life

The Influence of the Experience of Others—In a broad sense, physical education in America arose out of the life of the people here. More narrowly, physical education in America reflected the experience of others, but the very poverty of American ideas in this field in the early years of the Nineteenth Century contributed to a rather heavy weighting of foreign programs and purposes.

In the field of general education, we are indebted to Europe for the pattern of a state school system with state oversight and control. The motives approving state education in Europe would be obviously quite different from the ones guiding the plan in America. The influence of Pestalozzi is hard to estimate and yet everywhere he contributed both in method and subject matter. Impetus was given to the movement for professional training of teachers by the example set for us in Europe and this was outstanding not only in general education but also in the special field of physical education.

It is a desirable scientific trait to see what others have done before setting out upon any project. Too frequently wasted effort and futile undertakings result from failure to survey properly the field and learn of the progress of others in similar lines. This may be carried to extremes, to ignore home values and look for excellence only in foreign places is undoubtedly a serious mistake. So commonly is this quality exhibited in human nature, however, that there has passed into the language the saying, "A prophet is not without honor except in his own country." The philosopher may explain this as a quality to be observed in young nations, it has been commonly commented upon among Americans previous to the first World War.

There are many illustrations of failure of people to explore and evaluate domestic resources. America is the land of the Indian scout, and yet with all the background in scouting and the rich

lore available and the keen interest of Americans in Indian life, it remained for an Englishman a hundred years after the material was available to use Indian life and the scouting psychology in an educative way that would appeal to youth. The domestic resources in scouting as means for physical education of the American boy were not discovered because we were too much interested in imitating and paying homage to foreign physical education.

The Filipino people are very much interested in self-government and independence. They talk about little else, but in physical education as in many other aspects of education they are unable to discover the available material that is present in their tribal and folk ways. Their native sources in dances and in games are particularly rich and suitable for the children of the Islands. But instead of seeing any of the festival dances of the Bontocs in the schools, an observer will notice these barefoot children of the Islands going through the movements of a Russian dance without any comprehension of its meaning and of course without the equipment that belongs to a dance in the north temperate zone where heavy leather boots are worn. Again a failure to evaluate native sources.

The American population is in origin a transplanted people. Even those whom we call native born are at the most less than ten generations from the motherland. For the great majority they are less than five. It is quite natural, therefore, that in physical education the experience of the motherlands should have weight and bearing in determining the kind of physical education to be developed and carried on. Sentiment, however, must not be permitted to play too large a part. We should wish to arrive at a solution scientifically.

The Reliability of the Experience of Others.—How valuable is another's experience as a guide? To what extent can we learn by the experience of others? Mechanical things are readily transplanted, procedures in manufacture, technical skills, certain of the arts and crafts are easily learned. Wherever *things* as distinguished from *people* are dealt with, then it is quite easy to do as others do. In the organization of people as contrasted with the organization of things, there come into play ideas, customs (what the sociologist calls *mores*), attitudes, and beliefs that color and shape the procedure in such fashion that, when take over for another people,

such educational projects may be completely changed. Failing to take into account the underlying ideas, customs, and beliefs may hamper the transfer of a procedure in manufacture, as, for example, wood carving, rug weaving and basketry, but the influence of these factors is tremendously more effective in the matter of education, religion, and similar forms of culture.

Because some people are inclined to accept at times as reliable the experience of others is not sufficient basis for thinking that they were right in doing so. It is not uncommon to find people ready and willing to be guided by the experience of others, and especially is this true where there is ignorance of or doubt about the matter in question. Thus, in the feeding of children, in the treatment of disease, in the investment of money it is the rule rather than the exception to find people following, without discrimination, the experiences of others in the immediate environment. This is of course due to the general lack of knowledge prevailing among people concerning the proper way to feed children, the scientific treatment of disease, and the correct principles of investing money.

It would seem, therefore, that, among the possible many, there are two conditions of experience that should always be considered.

One should know all the pertinent conditions of the experience. An illustration of the importance of this view is afforded by the statement of a well-known actuary before the House Committee on Labor with regard to the effect of social insurance in Germany upon the physique of the German adult population. The argument was advanced that, according to military statistics, in consequence of compulsory social insurance there had been a very substantial improvement in the height and weight of those conscripted for military service. But the available evidence showed that his facts were incomplete. "The foremost German authority on the subject in commenting upon the German recruiting statistics historically reviewed for a long period of years observes more than once that the changes in the bodily proportions, chiefly as regards height and the ratio of rejection, must not be accepted as evidence of material physical alterations, but rather as being governed primarily, if not exclusively, by changes in standards of selection."¹

¹ Hoffman, F. L. *Army Anthropometry and Medical Rejection Statistics*, Prudential Insurance Co., pp. 23-27.

Or without knowledge of the conditions the opposite results may be inferred. Thus, in an address before the Congress on Race Betterment, a Presbyterian minister argued that recruiting statistics in England indicated a considerable diminution in stature and other evidence of physical deterioration. A Report from the Inter-Departmental Committee pointed out, however, some of the essential conditions of the experience under consideration and said, "The class from which the recruits are derived varies from time to time with the conditions of the labor market. When trade is good and employment is plentiful, it is only from the lowest stratum of the people that the Army receives its supply of men, when, on the other hand, trade is bad, a better class of recruits is available. Consequently the records of the recruiting department of the Army do not deal with a homogeneous sample of the people taken from one distinct class." The Inspector General of Recruiting in referring to the comment made by the minister said, "He is not justified in that. We have no data on which to form that opinion."

The psychic factors in experience should be recognized and if possible evaluated

The ready assumption that two things coming together are therefore related is a common fallacy. *Post hoc, ergo propter hoc* is a common error in medicine, in education, in experience in general. Popular writers on Birth Control argue the fact of better health conditions in Holland as due to the Birth Control measures which parallel the improvement in health. Other social agencies also parallel in time this improvement. Time relationship is not conclusive, it is likely to be misleading. In physical education *post hoc, ergo propter hoc* is not infrequently invoked. It has been the guide in the laying of many plans and the setting up of numerous programs. Instead of associating in cause and effect relationship such things as the West Point stance and the West Point breathing, the psychic factors of West Point life should also be given careful consideration. The psychic factors would thus hold to interpret German obedience and German education in the home as well as in the school.

Evaluation of the Experience in Terms of Results.—The experience may be reliable and the inference sound, but there is more to the question than that. Is the experience desirable? Are the results desirable? The experience is valuable for what it does or

does not do. By results one is not to be limited to such misleading terms as "practical," but the indirect and the more subtle effects are to be examined. Thus it would appear that several questions should be asked:

1. Are the results desirable? Are the results of Swedish Gymnastics desirable? Desirable for whom? They are not necessarily desirable for people in general, although they may be desirable for the Swedish people. To affirm otherwise would be to ignore all that we know of people's ideals, ideas, customs, attitudes, beliefs.

2. Are the apparent results the real ones or do they represent an unknown or different cause? Is there some other explanation of what really happens? In 1941 there was considerable concern because of the large number of rejections for military service. Was the nation as unfit as the rejections indicated it to be? What would have been the rejection rate if four exempted groups had been included? Did the rejections come from the unfit groups?

3. Are the results lasting? Do they represent modification of conduct or are they of temporary nature and susceptible of change at an early date? The posture of the children in their physical education periods is a case in point. Before one decides to adopt a plan of posture training he should give careful consideration to the matter of posture out of school and the question of lasting effects. What should be his position if he learned that posture in the schools was a school posture to be discarded as soon as the children were set free from school?

4. Are the results contributing to the principles which are held? The results should be referred to principles and judged in relation to the basic beliefs surrounding the experience.

Experience in Terms of Traits and Customs.—Many of the notions and standards for individual and social life in America arose out of a life quite different from the present and with sanctions that would scarcely meet with approval today. Many of the moral virtues, with which the physical educator deals most intimately, arose out of the ideals of the warrior class. Thus, it happened that in an insecure society, the chief business would be fighting and not raising grain or breeding sheep or making steel rails. Warriors with serfs had found the way to make others work for them and fight for them. The virtues that were built up were the ones set forth by the powerful of the groups and show a curious

mixture of good and evil Honor, courage, loyalty, and chivalry come to be interpretations of the way people think of human relationships and not absolutes in themselves

If we choose a man to some high office we honor him and we select him because of qualities he possesses Honor, then, means excellence in some quality which is admired by the group It may mean one thing in one place and quite a different thing in another Sportsmanship means one thing to the Filipino, something different to the American, and something else again to the Englishman

In a nation where men are born to positions, and receive honor because they are subservient and true to the traditions of the class to which they were born, to their clan and its intimate associations, honor comes to have a very different meaning from that given to it where it comes as a reward of merit In the former instance, it is not of great importance to have in the educational scheme plans for choosing leaders intelligently and on the basis of excellence in some quality admired by the group, supplemented by plans for educating the group to admire the things of greatest worth to the greatest number Now in physical education, the necessity for games and training in leadership have, until more recently, never appeared as vital to certain nations because such traits were not required by their scheme of social organization Therefore, it would appear that what people do in their social organization is an expression of the value of certain ideals and their recognition of the necessity of planning for securing them through education Their practice is good or bad only in relation to the ideas of which it is an expression It is clearly unwise to select for a people with one group of fundamental ideas a type of practice which illustrates another group of ideas, out of harmony and never to be accepted by the ones to whom the new practice is introduced

The significance of the ideas which move people is given by an analysis of loyalty This virtue arose out of the warrior's code and required that the serf, squire, follower, and retainers in general be true to some superior There was thus developed through the centuries the notion that one must be loyal to a superior Loyalty, as a quality of persons, has been the theme of some very interesting novels Galsworthy's play, "Loyalties," reveals the power in the topic as a theme for the dramatist Now, among certain

people to be loyal to the priesthood, the king, the overlord is of paramount importance, and although this type of loyalty is not so much in evidence today, still it played a rather prominent part in the life of people in the eighteenth and nineteenth centuries. On the contrary it may be said that in the United States the highest good is loyalty to truth as one sees it. Or take an illustration from the use of the word gentleman. To be a gentleman means one thing in London, another thing in Boston, and quite a different thing in the rural districts of the Middle West. To be a gentleman in China, in Jolo, in Java is altogether different from being a gentleman in Soviet Russia. Thus the notions which people have regarding virtues as well as many other things depend upon the whole hinterland of ideas shaping their judgment and are to be evaluated in terms of the sanctions of the society into which they are introduced.

It should be quite clear, therefore, that the type of physical education in any nation reflects the customs, the ideas, the beliefs, the attitudes, the conscious needs of the people. Also these characteristics are different for different peoples and they vary, especially, when the notions of human relationships vary greatly. We are never to be absolutely sure that we speak the language of the foreigner, even when we are able to carry on a conversation with him by using his own words and imitating successfully his inflections and pronunciations.

In the light of the foregoing, it would seem to be important to survey, even somewhat superficially, the social, political, economic, and military influences which shaped physical education in Germany, Sweden, France, Italy, and England.

German Physical Education.—Physical education in Germany began with the work of Frederick Jahn (1778-1852). With Jahn nationalism was a consuming passion and he devoted his energies not only in gymnastics but also in language and literature to a strengthening of national life.

There was need for it. "By 1808 all the Germanies were at the mercy of Napoleon. Prussia was shorn of half of her possessions and forced to obey the behests of her conqueror."² Jahn's popular gymnastics are to be viewed in the light of a nation's tragedy. The

² Hayes, C. J. *A Political and Cultural History of Modern Europe*, The Macmillan Co., New York, 1937, vol. 1, p. 667.

ideas of German teachers, leaders, and most of the peasants were by this fact of subjugation to France grouped around such central and pervasive motives as resisting the enemy to the West, development of national power, unification of all the Germanies, national consciousness as exhibited in language and literature, and German culture. The force of these ideas eventually led to a rehabilitated Germany.

The ideals and aspirations of Jahn were never realized. The motto of the German Turners, *Frisch, Frei, Froehlich, Fromm*, had to compete with a reactionary and feudalistic government. Jahn, brave and courageous spirit, rebelled from time to time against the limitations of the national life. In 1820, he and his Turners were suppressed, and until 1850 reaction was the note in Germany. Even then, with a free press and free speech granted, the force of education aimed to standardize individuals for the king.

The liberal and forward-looking philosophy of Jahn should not be forgotten. Stecher³ in a stirring article interprets the meaning of the motto, *Frisch, Frei, Froehlich, Fromm*. He writes:

"A free translation of this motto would be Free, Cheerful, Intelligent, Dependable or Good. We might also ask: What were Jahn's ideals? A reading of his rugged writings can leave no doubt in anyone's mind that what he wanted to accomplish by means of 'Turnen' was something entirely different from what, in recent years, is so often called 'gymnastics'."

"Jahn and his followers wanted to educate human beings. They were not interested primarily in the strong man nor in acrobats. Physical strength, it is true, was to them something worth striving for. But it was not an end in itself. It was a tool by means of which it was possible for a man to become free and healthy. To be weak meant that a person was at the mercy of all men, strength and freedom were linked together by them as something desirable for all human beings."

"Cheerfulness to them meant mental health, a sane outlook upon this world of ours with its 'good' far outweighing the efforts of the things that are bad. Cheerfulness was a worthwhile possession to be striven for, and gymnastics was the tool most useful to acquire this trait."

³ Stecher, W. A. The Turners and Physical Education, *Mind and Body*, February, 1927, pp. 419-422.

"Intelligence to them meant the utmost development of the natural mental endowment that is the precious possession of all human beings. It meant the ability to understand, to comprehend, to analyze, to think constructively. Gymnastics was a tool by means of which dormant mental faculties were aroused, cultivated, and strengthened.

"Dependability meant to them that human trait that in modern times might be called morality. A person who could not be depended upon, who was not good, was immoral, he was not to be trusted, he was a social misfit. Gymnastics helped to train such persons into a higher type of human being.

"An understanding, therefore, of what 'Turnen' really means should show that it does not mean merely muscular work of great skill, but that it also means mental, social, and moral training and education.

"When Jahn took his boys out to the Hasenheide, to the great open spaces outside Berlin, his gymnastic lesson was a combination of the most informal type of work, or songs or games, and of inspirational talks. He looked upon gymnastics as an instrument by means of which he aroused in his pupils a greater patriotism."

But Jahn's ideals and purposes were never realized in the national life of Imperial Germany. He helped to create a nation out of the struggling and warring principalities, only in the end to be thrown into prison, to see his liberal principles thwarted by the reactionary tactics of a landed aristocracy.

In the play of social forces, one gets an impression of the worth of human life, the value of human relationships, and the respect accorded to personality. Up to 1807, feudalism in Germany was the dominant social organization. Its lack of respect for personality and disregard for individual worth were finally appreciated in their true light by certain leaders and in the six years following 1807, Baron vom Stein and Chancellor Hardenberg put through the following reforms:

1. Stein's Edict of Emancipation which abolished serfdom throughout Prussia, October 9, 1807. Free trade in land was established and ownership of land was permitted to peasants and bourgeois as well as nobles. The peasants thus became free, although they were still bound to make fixed payments to their lords in the form of rent."⁴

⁴ Hayes, C. J. *Loc cit.*, p. 680.

2 Grant of local self-government (November 19, 1808) to all Prussian towns of 800 and over population

3 Hardenberg continued these reforms in 1811, by making peasants absolute owners of part of their holdings

4 Compulsory military service was introduced

5 Formation of organizations, with governmental approval, that developed nationalism. In this respect the work of Jahn in the Turnverein and that of Fichte and Arndt in the Jugendbund are outstanding

These are memorable achievements, but the type of physical education produced is to be viewed in the light of the prevailing social ideals, which were so constrictive to human personality. Legal enactments reflect public opinion, but the advances indicated above represented no great improvement in the social philosophy. The individual was still regarded as of little worth.

In Germany in the nineteenth century the relation of the individual to the state reveals more accurately the ideas that molded practice. The King and subject relationship was strong. The Church and school maintained these bonds by preaching and teaching. The teacher-training institutions were tuned to patriotism as the central theme. In the regulations of a seminary at Pyritz, piety was to be shown, among other ways "by respect for the King, our sovereign, and by unshaken fidelity to our country." The reforms inaugurated by von Stein did not mean freedom and personal liberty as we in America understand the terms. For years a fierce conflict was carried on between conservative and liberal political opinion.

King Frederick William III posing in the rôle of "father to his people" stated his ideas of education, political and social rights as follows: "We do not confer upon the individual or upon society any benefit when we educate him beyond the bounds of his social class and vocation, give him a cultivation which he cannot make use of, and awaken in his pretensions and needs which his lot in life does not allow him to satisfy."⁵

Physical education engaged in a procedure of handling human beings must use a method which conforms to prevailing ideas. The procedures and methods of a foreign system of gymnastics can

⁵ Reissner, E. H. *Nationalism and Education since 1789*, The Macmillan Co., 1923, p. 144.

never be acceptable in America unless we are willing to accept the ideas behind them. German physical education of the nineteenth century, admirable though it may have been in Germany, is without universal application because nations are social groupings with their own cultures. Foreign systems of physical education must give, without reservation, full service to the political, social, and military ideas of the time and place. If these ideas are quite repugnant to Americans, the practice which expresses and embodies these ideas is also unacceptable.

The physical education of Germany today is vastly different from that before 1914. The greatest importance is assigned to physical education, with character education next, and intellectual training last. Through physical education the boy is to become a man, learning to obey so he may later be able to command. He is taught to take greater pride in a well-formed physique than in fine clothes. True to the principle of reflecting national ideas it is developing with amazing rapidity new and interesting forms. The significance of these forms should be studied in relation to the prevailing ideas, customs, and standards in Germany.

The developments in physical education in Germany today are of far-reaching importance. In schools and universities, physical education occupies a place of major importance. In the latter, for example, no student can enter his fourth semester without participating proficiently for eighteen months. The Ministry of Education defines physical education as pre-military training. Through *Geländesport*, or open country sports, and *Wehrsport*, or military sport, the Germans seek to lay the foundations for a well trained body of youth for the national army.

In industry, in the army and navy, and among the general population, physical education is promoted in a variety of ways. The *Kraft durch Freude* organization seeks not only to promote health, but also wholesome use of leisure time. National Socialism has taken over physical education as one of the chief agencies for achievement of its program. Thus through the school and university, in the youth movement, in the labor service and in the Reichswehr, and in civilian life, there is the clear obligation to keep fit, to be strong, to be ready to serve Germany. To attain such goals, extensive facilities are provided, leaders are prepared, and organizations work constantly at the problem. The old

nineteenth century intellectualism characteristic of imperial Germany is gone. The whole official emphasis is upon self-denial, not as a philosophic principle of asceticism, but to conserve supplies. Modern Germany is seeking in this new emphasis for men and women of balance, poise and vigor, physically as well as intellectually strong, able to stand the strains of modern life.

Swedish Physical Education—The history of Sweden in the eighteenth and nineteenth centuries is one of struggling nationalism. Up to the Battle of Waterloo her nationalism was scarcely recognized, the military and naval prowess of Russia, England, and France ever contributing to her deep humiliation.

In 1807, both Russia and Denmark suddenly invaded Sweden. The Finnish province and the Åland Islands were taken from her. Reverberations of this act of international piracy were heard in 1919 and 1920, after the World War. In 1809, Gustavus IV was compelled to abdicate in favor of Charles XIII, an infirm and childless old man. This weak and partitioned Sweden was the national heritage of Per Henrik Ling (1776-1839). Inspired by the same kind of ideals that moved Jahn, Ling saw in gymnastics national strength and unity. Thus, too, in Sweden physical education arose in relation to military needs. The military character of Swedish gymnastics for nearly one hundred years is illustrated not only by the development of military gymnastics as such, but particularly by the presence of military teachers of gymnastics in the secondary schools.

Much of the procedure and method in Swedish gymnastics is essentially drill-room technique, and this procedure is to be interpreted in terms of military needs.

Since the Napoleonic era, political and social movements have been marked by efforts of reform. Feudalism never secured a real hold in Sweden. The Church never attained much political power. Instead of an absolute king, there was created an absolute Riksdag, and under the constitution the nobles played the chief roles.

The peasantry were better situated politically than in Germany. Many owned their own lands, and the country has remained largely agricultural. But still the common man was so little valued throughout the Nineteenth Century that universal manhood suffrage was denied. The social history of this land takes on the coloring of all peoples ruled by king and nobles.

Explanation of the emphasis on corrective gymnastics in Ling's system and in the recent gymnastics of Bukh (Denmark) is suggested by the occupational life of the Swedish and Danish peasant. The boy or girl from rural districts, accustomed to heavy, manual labor, becomes well-muscled, but set and rigid from occupational activities.

What Ling (1776-1839) and Branting (1779-1881) his successor did at the Royal Central Institute of Gymnastics is to be understood in relation to the military, political, and social ideas of their time and place. An extensive analysis of economic factors would reveal doubtless many interesting comparisons. Clearly, the reforms which were instituted were chiefly of an economic kind and of form more than content. So long as the education in the nation seeks to make the child docile, obedient to a superior, disciplined in a military sense, just so long will those in control permit unsentential modifications in social or economic status. Swedish gymnastics in its insistence on precision of movement, response-command exercises, and rigid day's order was, together with similar educational experiences in school, church, and home, favorable to the perpetuation of the existing social order.

It is interesting that increasing socialization in the nation is paralleled by the development of more functional programs in the schools. Physical education in Sweden has felt also the influence of Danish gymnastics. There is more emphasis today upon rhythmic movements. In the training centers, however, tradition and custom strongly prevail in the character of their gymnastic programs.

French Physical Education.—The nineteenth century revealed in France an Empire, a limited monarchy, the second Republic, the third Empire (an attempt at a commune in Paris, 1870), and finally the third Republic. A long history of kings, nobles, and clergy, who strove for temporal power, and serfs at the mercy of their overlords precedes that. Many of the political conditions that confronted Germany and Sweden were at one time duplicated in France, but still no Frenchman arose to found a national system of gymnastics. Doubtless, asceticism, scholasticism, and dominance of the all-powerful medieval church are back of the Frenchman's characteristic disregard for gymnastics. During the Napoleonic era, for obvious reasons, there were no incentives for national

gymnastics, but even in the dark days following the Franco-Prussian War (1870) nothing of outstanding development took place in gymnastics. This is to be explained in relation to the ideas, values, and appreciations that in France as elsewhere determine practice.

The lack of genuine interest in physical education in France is to be traced to ideas regarding its function in society. First, it is historically associated with war. Disliking war, Frenchmen find the drill a necessity, but not a pleasure. They associate drill in physical exercises with their period of military service which they are very glad to have completed. Moreover, their originality and individuality are repressed by drill. Through the Revolution they gained their independence, and this is a precious thing to every Frenchman. Though of necessity they must give up some of this liberty while they train themselves to protect the nation, at the expiration of this period they return with joy to "la liberté," and are apt to associate all physical exercise with the less pleasing period of their life.

In the second place, the influence of the two great privileged classes, the clergy and the nobles, is important. Though without actual political power today, the ideas they represent are still pervasive. As a heritage from medieval times the modern Frenchman retains his contempt for education of the body.

The ascetic and scholastic philosophy touched deeply the life of the people. As early as 1580, Montaigne attacked the scholastic attitude in the following words, "It is not a soul, it is not a body that we are training up, but it is man." Nearly two centuries later, Rousseau in his "Emile" (1762) again called attention to the defects of scholasticism. Following the humiliation of 1870, Swedish gymnastics were introduced in France, but it failed to become rooted in a country that politically was similar to the Sweden of 1808, but socially vastly different. The influence of scholasticism made arduous the labors of Baron Pierre de Coubertin to revive the Olympic games. So little regard exists for the education of man through physical activities that it is unusual to see in France a gymnasium class where there is real spontaneous interest in the work.

The nobility established in France the ideal of a refined and elegant existence which included brilliant conversation (a play of

wit), the play of emotions (note Delsarte's contribution and that of the French pantomimists), the enjoyment of the presence of the opposite sex, a sincere appreciation and love of beauty and art. It is these things that the Frenchman enjoys, not in the same degree of refinement and elegance by all, but each according to his means and taste. The appearance of a heavily muscled athlete does not appeal to French taste. It is not beautiful. They associate this type quite naturally with gymnastics. Due to a lack of wholesome play in the schools, games seem dull and pointless to adult Frenchmen, even the supreme Lenglén and the debonair Carpentier aroused only a mild interest. To the bourgeoisie, an ideal of a conventional existence with aspirations to imitate the nobility is most influential, to the peasant play and games seem a waste of time because he has enough physical activity.

And yet there is physical education in France, but nothing as extensive as the popular gymnastics in Germany. It has seemed, doubtless, a necessary evil. Its early development was marked by application to utilitarian purposes. Physical education for firemen was something that could be understood, but for all persons, no, that was impossible. The truly French development of physical education by Georges Hébert reflects this same utility. It is based upon the idea of training soldiers rather than citizens. It is considered in France to be preferable to Swedish gymnastics for this purpose.

This system developed by Lieutenant Georges Hébert is based upon the natural activities of man, namely, running, jumping, climbing, combat, etc. Lieutenant Hébert says,⁶ "Progress in physical education consists not in inventing movements of a special nature but in distinguishing by experience the best exercises to use in reaching the goal—physical perfection. This method includes.

"1 Essential part—Consisting of indispensable exercises, marching, running, jumping, swimming, climbing, lifting, throwing, and defense.

"2 Accessory part—Exercises having a definite effect on different parts of the organism, all simple and combined movements of the arms, legs, and body.

"3 Complementary part—Elementary exercises are not ade-

⁶ Hébert, G. *Le Guide Pratique d'Education Physique*, L. Vuibert, Paris, 1916.

quate for securing physical perfection Games and sports supply the means of getting co-ordination "

Italian Physical Education.—When Vittorino da Feltre established his school at Mantua in 1423 for the sons of Italian noblemen he called it, *La Casa Giocosa*, The House of Delight It was one of the first efforts to educate the whole man after the debacle of Greek civilization Long years were to intervene before Italy again was to see an outstanding example of physical education at home When Mussolini assumed the dictation of Italian national policy, he set a new pattern for Italy *La Casa Giocosa* is forgotten and a "nation in arms" exploits to the limit the possibilities of physical education for the development of physique He who would build a nation must develop the young and if that nation has military ideals, the education will have its own appropriate forms

In Italy physical education is promoted by a national organization outside the schools, called the *Opera Nazionale Balilla per l'Educazione Fisica*. The purpose of the *Balilla Institute* is to develop the youth of the country, to promote sports, and to create a live and dynamic patriotism

In pre-Fascist days physical education scarcely existed in Italy A sterile intellectualism pervaded the schools which saw no need for anything in education but the systematic items of knowledge which constituted the curricula The schools during the revolutionary period seemed quite unable to acquire quickly a new viewpoint, and, therefore, a special institute was created to conduct physical education The *Balilla* serves boys 8 to 14 years of age After this, boys 14 to 18 years of age are trained in the *Avanguardisti*, from which they go into the Fascist *Milizia* Similar organizations for girls are the *Piccole* for little girls and the *Giovani Italiane* for older ones

Pupils of elementary and secondary school age receive instruction in physical education and military training in the *Balilla* Special attention is given to fencing, cycling, football, swimming, riding, and sking

The *Accademia di Educazione Fisica e Giovanile* is a creation of the *Balilla* for the training of officers for youth organizations and leaders of physical education in the secondary schools The academy is excellently equipped, not only to conduct the practical

courses in activities but also to give the scientific theoretical instruction. There are laboratories for anatomy, physiology, radiology, anthropometry, physiotherapy, psychology, and chemistry. Students for the academy are selected by examination. The course covers three years. There is a similar academy for girls. In Italy as in Germany, physical education serves national ideals.

English Physical Education.—Ever since 1215, with the signing of the Magna Charta, the English people had been gaining political control of their government. The seventeenth century saw the triumph of Parliamentary Government in England. In many ways during the eighteenth and nineteenth centuries, the English people exacted from their sovereigns written promises by which the crown surrendered certain powers. These were taken over by Parliament, making Great Britain a "limited" rather than an "absolute monarchy." Taxes, law making, control of the courts, and the right to make war thus passed to the people in name only at first. Qualifications for voting dependent upon estate holdings, Parliamentary bribery and corruption in the eighteenth century served to retain the control in the hands of the nobles.

But reform movements headed by Fox and Pitt, later by Wilberforce and Clarkson, gradually succeeded in establishing a content for the phrase, "English liberty."

Socially, the eighteenth century in England gave little value to the individual human life. England held to overseas traffic in slaves up to 1807, in 1819, there were 223 capital offenses known to law. The industrial revolution in the first portion of the nineteenth century created deplorable conditions for the masses. In 1833, a fifth of the 200,000 persons working in cotton factories were under fourteen years of age, considerably more than a third were under eighteen.

But the ideas of feudalism so marked in Germany, the tragic fatalism of Sweden, the asceticism, scholasticism and aestheticism of France, although represented in part, were never characteristic of the English people. The separation of the Church and State in England (1534), arrived at for ulterior purposes on the part of Henry VIII, contributed to a greater freedom in thought and action for the people as time went on.

Opposed to the distinctly unfavorable political and social factors in the life of the English people throughout the eighteenth and

nineteenth centuries is the body of traits and national characteristics seeking freedom, liberty, and self-directed activity Shearman⁷ remarks, "that competitions in running, jumping, and hurling of heavy weights are not only indigenous to the land, but have been one of the chief characteristics of both town and country life in England as far back as chronicles will reach, and that athletic sports, though they have had their days of waxing and waning, have always been a feature of life in 'Merrie England' "

The Youth Hostel movement "grows out of a long established custom of walking and cycling," as Cassidy⁸ observes In contrast with a similar development in Germany, the English retain voluntary association and allow the movement to grow in relation to typical English traditions of freedom

Sport in various forms reflects the Englishman's ideas of life The Colonial in Hong Kong going to play golf at Repulse Bay and the army officer in India engaged in polo are illustrations of the same trait Hence, although Swedish gymnastics were introduced in England and even are part of the physical training of children in the English Board schools, there remains the outstanding fact that no system of physical education has been set up by an Englishman and no system introduced has had the influence or vogue characteristic of its place of origin In short, the traits and characteristics of Englishmen are apparently best expressed and satisfied in the games, sports and athletics that have been their heritage since the earliest days of the British people

It will appear, therefore, that the type of physical education developed in any nation reflects the customs, ideas, beliefs, attitudes, and conscious needs of the people It may be asked, then, what European nation more nearly approximates the ideas, customs, attitudes, and conscious needs of America? In addition to our ancestry (largely English), our language, our common law, it is the verdict of history that America most nearly resembles England in these fundamental qualities This judgment will explain why the gymnastics of Sweden, Germany and Denmark,

⁷ Shearman, M Badminton Library of Sports and Pastimes, Athletics and Football

⁸ Cassidy, R Youth Hostels England and Germany, *The Nation's Schools*, May, 1937

and the emotional posturings of Delsarte (France) never gained any wide acceptance in the United States. Contrariwise, the sports, games, and athletics of England are the very heart of our physical education today.

Russian Physical Education.—In Russia physical education is used to promote communist social theory, as indeed is all education. Physical education is never an end in itself but aims solely to serve the Soviet state. This view pervades Soviet literature on the subject. Panov writes:

"Proletarian physical culture in the USSR should by no means be considered as an independent field of work, unconnected with the whole proletarian culture . . . [it] aims at the restoration of the health of the working masses and tries to combat the one-sidedness and often mutilating effects of implements, [it] should not only strengthen the health and increase labor productivity . . . it should also train in them [workers] certain occupational habits and accustom them to distribute their energies regularly during the working day."

Russian physical education is characterized by a deep seriousness of attitude. In the United States, it is not uncommon to hear criticisms of the serious attitudes of our athletes in championship competitions and the drudgery which pervades the training and practice periods of so many of our games. The Russian seriousness, however, is of another sort. The athletes are preparing themselves for the class struggle and hence strong, healthy, and vigorous physiques are needed for that. They little knew, a few years ago, how well they were preparing themselves or how severely they would be tested for stamina and endurance in the years 1941-1942.

In the early days of the revolution, there was created a special Supreme Council of Physical Culture, headed by scholars and professors who were competent in the scientific and practical aspects of the field—an interesting commentary on our own government's appreciation of values. The dangers confronting the Soviet Union led them to value highly such qualities as health, strength, dexterity, discipline, boldness, presence of mind, sturdiness, and alertness. They were realistic enough to understand that

* Woody, T. *New Minds New Men*. The Macmillan Co., New York, 1932, p. 409.

these were desirable qualities, not only in the men of the Red Army but also in all persons of the population

Physical education of youth is conducted through two organizations the Pioneers and the Komsomols The Pioneers comprise youth from ten to sixteen or seventeen years of age and the Komsomols include those from fourteen to twenty-three These are organizations of the Communist Party, but all do not become members of the party nor are all youth in these groups The Pioneers developed out of the Boy Scouts and Girl Scouts which disappeared as organizations during the revolution Hence, the Pioneers conduct many of the procedures of scouting Older boys of the Komsomols serve as leaders of the Pioneers

The Komsomol is the League of Communist Youth It is actively political The responsibility of these two groups for carrying on the program of physical education rather than their political status makes them of interest here

In addition to the Pioneers and Komsomols, there are various athletic clubs, sports' associations, physical education groups of labor unions, and other bodies which are concerned largely with adult needs and interests

This movement in Russia is manifesting a real interest in national health problems The antialcohol and antitobacco crusades are strongly supported by the Pioneers and Komsomols They are also active in social hygiene education and seek to develop wholesome ideas and practices in sex life Quackery in medicine and common superstitions are also attacked as a part of their effort to be scientific and socially useful

American Physical Education.—The third decade of the nineteenth century saw sporadic efforts at physical education in the work of Partridge with his military academies, the German refugees, Beck, Follen, and Lieber, the manual labor movement, and the calisthenics of Catherine Beecher But the nation was engaged primarily in agriculture and its allied business The energy of the population was poured out in wrestling from nature a livelihood It was a grim business and no time was left for leisure and little for education The ideas of personal development and self-expression had little opportunity for realization

With the industrial revolution came remarkable changes New peoples coming into the cities found the church, the private and

charity schools unable to meet the educational needs "In 1833," says Cubberley,¹⁰ "it was estimated that one eighth of the total population of New York City was composed of public paupers and criminals, while the city had one saloon for every eighty men, women, and children in the total population "

The strict moral code of the rural districts, living remnants of Puritanism, broke down in the cities, and the political ideals of those "fit to rule" fought in the open against the claims of the common man

The industrial revolution after the Civil War opened new and varied economic opportunities which were eagerly grasped, with the result that in the latter half of the nineteenth century the distribution of the population in rural and urban communities was altered profoundly, and the factory, instead of the home, became the center of vocational life for many people

These manifestations of human activity were in response to the ideas of the time and place Political liberty, rich natural resources, opportunity for advancement in security, in prestige, in enjoyment of luxury, gave a different set of ideas to ferment in America than was possible in Europe in the same period The need for a system of gymnastics which arose in Germany and in Sweden was never apparent in these early days in the United States

But the factory system and urban life changed the social groups in many ways, so that from time to time people questioned concerning the need for proper physical development Foundation for this concern was laid earlier by the work of a number of German refugees who had introduced the Jahn gymnastics into America, it was strengthened by the lectures and writings of Dio Lewis and Catherine Beecher in the middle of the century, who vigorously assailed the physical weakness and physical defects of American boys and girls

Consequently, at the sessions of the famous Physical Training Conference held in Boston in 1889, the outstanding view regarding physical education was the corrective one But the Conference was not a meeting of specialists in physical education alone, it was also attended by educators, and these school people set up a number of conditions that reflected the ideas they had concerning

¹⁰ Cubberley, E P History of Public Education in the United States, Houghton Mifflin Co., p 107

the function of education. In effect, the schoolmen proposed that any physical training that was to be taken into the school must require very little time, must be inexpensive and not demand specially trained teachers, must conduct its activities in the classroom (activity carried on outside the school building could not be educative), and must not require apparatus.

Unfortunately, the experts in physical training of the time came forward and said in effect: "We have just what you want. We propose systematic exercises that can be taught by the regular teacher in the classroom. No apparatus will be required, and the expense is very moderate. These exercises will correct the school-room stoop, provide relief for the mind, and bring health and vigor to the body. The antiseptic request of the schoolmen was accorded a sterilized program, vestiges of which remain today as 'ten minutes a day of calisthenics'."

Now, this in brief represents the beginning of physical education in the schools of the United States. No study was made of the kind of activities boys and girls need for developmental purposes, nor of the usages to which physical activities may be put in the setting up and acquirement of standards of conduct. The school-room stoop and physical exercises loomed large as the problems. A ready cure was proposed for a very complex disturbance with the usual unsatisfactory results when unscientific methods are proposed.

This type of physical training (for it was nothing more than a training procedure) never caught the imagination of boys and girls. They were asked to go through an innumerable number of stupid posturings when their whole being was calling for a kind of activity based on the neuron connections already set up and organized in their nervous systems. Consequently, from time to time, youth took into its own hands the business of physical education. In colleges and high schools, teams were organized for the playing of games, meets were held with other teams, and soon the institutions represented found themselves involved in disputes, financial arrangements, and real embarrassments. Not yet appreciating the place of physical education in the education of young people, schoolmen set up faculty advisors, or managers, to control an activity with which they had little sympathy and no understanding.

Thus, quite characteristically examples of two types of physical education in the school may be found, one composed of artificial exercises which arose in response to a group of ideas wholly foreign to the traits, characteristics, and needs of American boys and girls, and that are justified by those who propose them on the grounds of correction of defects, acquirement of health, or promotion of discipline. That such exercises given *en masse* do not correct the defects which require accurate diagnosis and specific, individual treatment, that they are not conducive to health interpreted in the light of present-day available knowledge, and that the discipline they promote is that of the barracks, have not been understood sufficiently by educators.

The other is represented by the extreme development of competitive athletics which arose as a natural activity of youth, stimulated by the commercial and advertising values of games, and without the educational leadership which such an activity should, attract. The early days of sport in America bear the marks of the gambler, pugilist, and plug-ugly. Some of its present-day manifestations reveal these early scars. But games have been continued in the school not so much because superintendents desired them as educative activities, but either because they were helpless to prevent them, or saw in them an advertising asset. It has rarely occurred to schoolmen to use physical education for worthwhile educational goals. If one wished to teach children the value of international good will, one would not select as teacher a believer in war. If one desired to teach science in the schools, one would not place children under the guidance of an antivivisectionist or an antivaccinationist. However, in the teaching of school games, the teacher (coach) is selected frequently not on his educational qualifications but on his reputed ability to turn out a winning team. That he may be a cussing, raving, roaring type of bully makes little difference, because as yet, too frequently, the goals are commercial rather than educational.

Recent Trends in America The most recent trend in physical education flows out of the war which has given an immense emphasis to physical fitness. The military services and state programs reflect this interest.

There continues a real emphasis upon recreational interests and skills. The need for desirable ways of living in longer leisure

periods has been expressed by many in various professional fields. Education for leisure marks a proper emphasis in physical education today.

The remarkable modern dance movement appears to be one of the most vital, thoroughly alive art forms in current American life. In some respects its development in the theater and in stage recitals goes beyond what seems desirable in schools. For example, the demands of art in the dance frequently conflict with the welfare of the individual performer. Notions of line, design, rhythm pattern, and emphasis often lead to use of the foot in a weak, pronated position, to strong accent with the bare foot, to bending of the trunk backward, and similar distortions which injure the musculo-skeletal mechanism. What the dance does in the theater may be interesting but it is often unacceptable as a criterion of what to do in schools.

The sport, game and athletic activities continue to appeal to both players and spectators. Both aspects seem very wholesome. It is rather remarkable that the rôle of the spectator at music recitals, dance recitals and art exhibitions is socially approved, but that watching such intensely dramatic and human art as football and baseball contests is called "spectatoritis" and frowned upon. And yet the rôle of the understanding observer of sport is not to be despised. It may be granted that participation is desirable, and surely the pages of this book argue for that. It may also be observed that participation in music, dance, painting, drawing and sculpturing is also admirable. But all cannot play football, nor baseball, nor compete in the Olympic games. There is a place for the dramatic festivals of sport and the modern American culture gives them a welcome.

Swimming is increasingly popular. More and more pools are being constructed, beaches reclaimed for use, and streams restored to their natural state. The woods and fields, camping, hunting and fishing claim their followers.

In the professional field, preparation of competent workers is extending widely, colleges and universities offer majors and minors, and the private school of physical education has nearly disappeared. Increasing attention is given to testing and measuring results, and from time to time outstanding researches appear. In spite of some set-backs, the profession has attained the respect

of colleagues in schools and colleges, support of tax payers, and confidence in itself

Summary—In the historic record of man's adjustment to life through the use of physical education, the following evidences appear

1 Physical education is a complex cultural art greatly influenced by the experience of others

2 In interpreting the influence of the experience of others errors may occur due to lack of pertinent information, or to failure in understanding psychic factors, or to confusion in evaluating the results

3 National physical education reflects traits, customs, and beliefs

4 Two great periods of German physical education express the ideas of the time and place During the period of Jahn, the work of a great man reflected the popular will against a stubborn and reactionary government The other period is the present, in which the government uses physical education widely to help secure its political purposes

5 Swedish physical education reflected prevailing social ideas as well as the efforts of Ling to establish scientific procedures Increasing socialization in Sweden parallels the development of more natural forms of physical education

6 French physical education never developed a national system although French public education is both national and systematic

7 Modern Italian physical education under the Fascistic regime is intensely nationalistic with marked military aspects in the program

8 English physical education has always been desultory and even games which reflect English traits best are conducted rather casually and with little organization compared to the American standard

9 Russian physical education is first political and secondarily for technical outcomes

10 In the United States physical education is highly varied with modern stresses on recreation, leisure education, and fitness The varied programs reflect the varied culture pattern Some of the more dominant ideas are

Physical education for all, not on a class basis, but on a developmental one, adequate for the needs of the individual

Activity carried on in wholesome, healthful environment affording the best opportunity possible

Activity pervaded by the spirit of play and marked by joy and happiness.

Knowledge of the activity, so that the individual knows his obligations and may act in a co-operative fashion to attain goals that he has helped to set up

Habits and skills which will carry on in the life of the individual

Vigorous activity under the direction of responsible and capable leaders

QUESTIONS

1 Has European experience influenced physical education in the United States? Is the experience of others always of great value?

2 Why do peoples tend not to use their own indigenous resources?

3 How reliable is another's experience for you? Is this always, seldom, or rarely true?

4 Why is it important to know all the conditions of an experience?

5 What is the significance of the psychic factors in a cultural experience?

6 How can you evaluate the experience of others?

7 How do you distinguish between social customs as experience and biological findings as experience?

8 What were the cultural and political ideas in Germany which gave a background for Jahn's work?

9 What was the meaning of the motto of the Turners?

10 Why did Jahn's work not achieve success in his life time?

11 What are the significant changes in physical education produced by National Socialism?

12 What was the political and cultural background in which Ling developed physical education in Sweden?

13 How has Swedish physical education changed in recent years?

14 Why have the French never produced a national system of physical education?

15 What is the dominant note in Italian physical education today? How is it organized to accomplish its purpose?

16 What are the traits, customs, and characteristics of English culture out of which physical education developed?

17 What are the purposes of Russian physical education?

18 How did the Physical Training Conference of 1889 influence physical education in the United States?

19 What is the athletic influence in the United States?

20 What are recent trends in physical education in the United States?

REFERENCE READINGS

- 1 Brownell, W C French Traits Charles Scribner's Sons, New York, 1919
- 2 Dambach, J Physical Education in Germany Bureau of Publications, Teachers College, Columbia University, New York, 1937
- 3 Deuel, W R People Under Hitler Harcourt, Brace and Co, New York, 1942
- 4 Hale, R W, Jr Democratic France Coward-McCann, New York, 1941
- 5 Hayes, C J H A Political and Cultural History of Modern Europe The Macmillan Co, 1937
- 6 Kandel, I L The Making of Nazis Bureau of Publications, Teachers College, Columbia University, New York, 1936
- 7 King, B Changing Man The Education System of the U S S R Viking Press, New York, 1937
- 8 Laski, H England Speaks The Macmillan Co, New York, 1941, p 216
- 9 Leonard, F E and McKenzie, R T History of Physical Education Lea and Febiger, Philadelphia, 1927
- 10 Marraro, H R The New Education in Italy Vanni, Inc, New York, 1936
- 11 Schuman, F L The Nazi Dictatorship Knopf, New York, 1936
- 12 Williams, J F The Inevitable Necessity, *School and Society*, May 4, 1940, pp 561-66, Fairy Tales and Reality, *School and Society*, January 11, 1941, pp 38-39
- 13 Woody, T New Minds New Men The Macmillan Co, New York, 1932

AN ANALYSIS OF THE BASIC PROBLEMS SHAPING PHYSICAL EDUCATION IN THE UNITED STATES

"Our generation, like all preceding generations of mankind, inevitably takes what it finds largely for granted, and the great mass of men who argue about existing conditions assume a fundamental likeness to past conditions as the basis of their conclusions in regard to the present and the still unrolled future

"Such a procedure becomes more and more dangerous, for although a continuity persists, there are more numerous, deeper and wider reaching contrasts between the world of today and that of a hundred, or even fifty years ago, than have developed in any corresponding lapse of time since the beginning of civilization"—Robinson

"The burden of our civilization is not merely, as many suppose, that the product of industry is ill-distributed, or its conduct tyrannical, or its operation interrupted by bitter disagreements. It is that industry itself comes to hold a position of exclusive predominance among human interests, which no single interest, and least of all the provision of the material means of existence, is fit to occupy. Like a hypochondriac who is so absorbed in the processes of his own digestion that he goes to the grave before he has begun to live, industrialized communities neglect the very objects of which it is worth while to acquire riches in their feverish preoccupation with the means by which riches can be acquired."—Tawney

CHAPTER VII

An Analysis of the Basic Problems Shaping Physical Education in the United States

The Problem Examined.—Such a fundamental¹ activity as physical education should reveal readily the principles of its practice. Examination of the practice in school or college, however, shows with astonishing uniformity such a variety, that one looks with some skepticism upon the propositions brought forward to sanction the activities carried on. Indeed, it appears that, frequently, programs of physical education are not based upon principles, but rather arise out of tradition, habit, or some special limitation of the time or place.

But even when physical education appears most clearly as the product of tradition, the search for principles should go on. Some principles will be revealed in a study of the basic relationships of physical education to the growth and developmental impulses of the individual, in the analysis of environmental changes affecting man, and in the comparisons of primitive life with modern industrial society. The common alternative to such study seeks approval of program or method on the basis of physical limitation of equipment. In effect, what people do in any time or place reflects the understanding they have of principles and the valuation they give to different things. When programs of education are determined by constrictions and expansions of opportunity rather than by principles, the results are not apt to be worth the effort given to the enterprise.

The problem of physical education today is quite different from that confronting the States at the end of the Civil War, although there are more common elements in those two situations than in America and Germany in 1942. Always certain objectives will suggest a seeming identity of interests between peoples and

¹ The widespread distribution of its activities among all peoples and over many age levels, the use of its programs in schools and colleges, the Army and Navy, business and industrial organizations, and the racial and ecologic bearings of its activities warrant the word.

periods, such as physical strength, health and vitality. But the more indirect goals of physical education must not interfere with a thorough analysis of the process, and an understanding of the forces at work shaping the program to the needs of the time and the place.

Modern civilization in America presents problems of importance for all phases of education. Physical education cannot escape their insistent demands for solution. Thus, the study of physical education in the United States will need to inquire into the economic, political, and social influences in modern civilization. Such study will need to point toward a statement of aims and objectives. It will, of necessity, be compelled to recognize the economic limitation placed upon programs, the political purpose behind many sanctions, and the social controls effective in a variety of ways. In touch with the lessons from history, it must understand that these forces also vary with time and with place. Nothing is more changing than the *status quo*.

In such analysis, physical education will begin to distinguish between principles that point to man's biologic inheritance and cheap devices for satisfying local conditions. The community which is too poor to provide adequate educational opportunities for its children and the city with an abundance of riches may each present a pauperized program of physical education. Principles of physical education are not involved in such situations. So with political and social factors. These will have influence for physical education in accordance with the prevailing philosophy of life of the time and place.

The student of physical education recognizes, however, the transitory character of these influences. For progress in the direction of Agassiz's remark that education should proceed in harmony with nature, he keeps clearly in mind the fundamental biologic character of physical education, and becomes actively interested in the agencies in human society concerned with the interpretations, guidance, and control of economic, political, and social influences. For purposes of realization of the valid aims of physical education, the leaders in this field must give sympathetic and understanding attention to the housing problem, to the question of limitation of armament, to child labor laws, to length of the working day and week, to absentee ownership of coal mines, to

innumerable economic, political, and social movements. Since physical education is essentially an educational project, it studies industry, to know its limitations and if possible to avoid them, it studies political systems, to comprehend their full meaning and if possible to sanction them, it studies social ideals, to criticize or approve and to help interpret life as development.

The conflict that exists today between the immemorial, racial needs of man, and the demands of an industrialized society, presents nothing permanent. It is a conflict, and hence a problem. As a problem, it is to be attacked by seeking to understand the operating forces. It is not to be supposed that any real progress could be expected by transplanting to one country the physical education program of a different time and place. The needs of America in this field are not to be met by a gymnastic system from foreign soil that arose in response to political, social, military, and economic needs of a different order. The present sets the mold within which the developmental forms must occur. To soften the demands of the economic system, to stimulate wider application of scientific knowledge, and to quicken social and political ideas and ideals that favor growth and development—these are the rough outlines of the problem.

Economic Forces and Physical Education.—All forms of education reflect the influence of economic forces, in some respects physical education has been more swayed than others. The United States has passed with unprecedented speed through the usual phases of economic progress. From the early agricultural community engaged primarily in cultivation of the soil, there has developed the premier industrial and financial nation of the world. The exploitation of rich natural resources and the rapid extension of transportation and communication have been associated with several profound economic changes of deep significance to the nation, and full of lessons for physical education. *Shifts and growth in population, aliens and fitness, the swing to the cities, sedentarianism, the industrialization of society, women and children in industry, world leadership*, especially since the first World War—these are the pertinent subjects.

Shifts and Growth in Population—Between 1840 and 1860 the population of the United States increased naturally, but at the same time enormous numbers were added to the population by

immigration The years 1845 and 1855 were marked by a great wave of European immigration, consisting chiefly of Irish, Germans, and English Of these groups, the Irish settled chiefly in the cities of the Atlantic seaboard, the Germans and English moved into the rural districts of the Middle West Table VIII shows that by 1850 something over two million immigrants had come to the new world, in ten years more the total was considerably over four million

TABLE VIII
POPULATION OF THE UNITED STATES, 1790-1940*
(White, Colored, and Immigrants)

Year	White	Colored	Total	Immigration during decade
1790	3,172,006	757,208	3,929,214	
1800	4,306,446	1,002,037	5,308,483	
1810	5,862,083	1,377,808	7,239,891	
1820	7,862,116	1,771,656	9,633,822	
1830	10,537,378	2,328,642	12,866,020	143,430
1840	14,195,305	2,373,643	17,069,453	599,125
1850	19,553,068	3,638,308	23,191,376	1,713,251
1860	27,001,491	4,441,830	31,443,321	2,598,214
1870	33,539,377	4,830,009	38,533,871	2,377,279
1880	43,402,970	6,530,793	50,155,783	2,673,722
1890	55,101,258	7,488,676	62,947,714	5,240,512
1900	66,309,196	8,333,994	75,094,575	3,687,564
1910	81,731,957	9,327,763	91,972,266	3,795,886
1920	94,220,915	10,403,131	105,710,620	5,735,611
1930	110,236,740	12,438,306	122,775,046	4,107,259
1940	113,213,287	13,455,983	131,069,275	523,431

* Sixteenth Census of the United States 1940 figures based on five per cent sample tabulation of census returns Figures for white population in 1930 and 1940 include Mexicans Immigration figures 1930 and 1940 from Statistical Abstracts, 1940

This tremendous immigration up to the middle of 1914 brought many diverse elements Unused to a democratic form of government, and retaining, as might be expected, the customs and traditions of the mother land, they frequently formed incongruous communities in America Instead of a melting pot and ready assimilation, there arose "Little Italy," "A New World Bohemia," "German Cities," and other evidences of a transplanted people

Many in these groups cast off their old-world allegiances and became both in war and in peace full citizens of the nation. All retained, in minor ways, the customs and viewpoints of their origin. Consequently we find educational practice in certain communities colored by the procedures of foreign schools, and particularly is this true in physical education. The native born in the United States had been so busy with transportation, Indian fighting, the emigration to the West, that little time or attention was given to the physical education of the people. Consequently, immigrants from nations that had national systems of gymnastics not only furnished early leaders, but formed the nucleus around which gymnastic organizations were to cluster. It never occurred to these earnest people that the aims and purposes, methods and materials of European peoples would be quite unsuited to the citizens of a new world democracy, that the values considered important in the training of the subject of a King might be quite out of place in the education of the citizens of a republic.

This great wave of immigration then beginning about 1845, and continuing for seventy years, presented the problems associated with foreign systems of gymnastics. More important than these, however, were the social and eugenic problems growing out of the unfit and weak types which made up a large part of this new population. To what extent the national vitality has been vitiated by this influx can never be determined, but the final survey of the draft statistics is somewhat indicative.

Aliens and Fitness—The Second Report² of the Provost Marshal General (1919) to the Secretary of War compares the alien and native rejections. The Report notes, from the special work carried on by Local Board No. 129, New York City, the following: "However, the figures seem to indicate that the foreign-born registrants were markedly less fit for service than the native born, but that there is no marked difference between the native born of foreign parents and those of native American stock."

This observation would indicate that immigrants in recent years, and particularly since 1896, were unable to reach a standard of physical fitness acceptable to the Army in 1917.

This comparison of alien and native rejections (Table X) was

² Second Report of the Provost Marshal General to the Secretary of War, 1919,

based upon "some 85,000 examinations in dominant alien wards in the cities of New York, Philadelphia, Chicago, Cleveland, Milwaukee, and Cincinnati, representing a registration of 300,000" These were compared with "some 100,000 examinations assembled from other than city boards in the states of Indiana, Iowa, Kansas, Kentucky, and Ohio, representing also a registration of 300,000"

Below in Table IX it is shown that in every 100,000 men the native born would yield 3500 more (an additional regiment at war strength), for military service, than would a like number of foreign born

The nonassimilable character of our immigrants is indicated by a study of the desertions from June 5, 1917, to September 11, 1918 (Table X)

TABLE IX

PHYSICAL REJECTIONS IN ALIEN AND NATIVE COMMUNITIES COMPARED

	Alien and native rejections compared	Number	Percentage of examined
1	Total number of records of examination compared in dominant alien and native communities	184,854	
2	Rejected (Group D)	28,184	15 25
3	Total compared, alien communities	84,723	
4	Rejected (Group D)	14,525	17 14
5	Total compared, native communities	100,131	
6	Rejected (Group D)	13,659	13 64

Many desertions of aliens were technical, due to ignorance of the laws and inability to read English, and clerical errors due to difficulties in the mail service. Apart from these factors, the desertions were unusually large, and especially in border states such as Arizona and New Mexico.

These data should lead physical education to support the policy of restricted immigration, and to help promote all measures which give promise of success in correcting remediable defects and developing strength and organic vigor.

The Swing to the Cities—The swing to the cities, Table XI, is one of the striking social phenomena from 1830 on. It has continued to show about a 5 per cent shift each decade until the

TABLE X
REPORTED DESERTIONS, BY CITIZENSHIP, COMPARED³

	Reported desertions, by citizenship, compared	Number	Percentage of registrants	Percentage of desertions by nationality
1	Total alien and citizen registrants June 5, 1917, to September 11, 1918	10,679,814	100 00	
2	Total desertions	474,861	4 45	
3	Total alien registrants	1,703,006		100 00
4	Reported alien desertions	185,081	1 73	10 87
5	Total citizen registrants	8,976,808		100 00
6	Reported citizen desertions	789,780	2 71	8 28

TABLE XI
URBAN AND RURAL POPULATION OF THE UNITED STATES—1900-1940*

Class	1940	1930	1920	1910	1900
Total number	181,869,275	122,775,046	105,710,620	91,972,266	75,994,575
Urban	74,423,702	68,954,823	54,304,603	42,166,120	30,330,433
Rural	57,245,573	53,820,223	51,406,017	40,806,146	45,614,142
Total per cent	100	100	100	100	100
Urban	56 5	56 2	51 4	45 8	40 0
Rural	43 5	43 8	48 6	54 2	60 0

* Sixteenth Census of the United States

census of 1940 The chief causes of this concentration in urban communities, aside from gregariousness, has been improved transportation and the factory system ⁴ The discovery of gold in California, and the consequent rush to the West in 1849, slowed down this flight from the land in the decade 1850-1860 The Civil War,

³ Provost Marshall General *Loc cit*, p 206

⁴ Gregariousness rather than industrialization accounts for the cities of Australia and China Transportation and the factory system accelerate the grouping of individuals together

in 1860-1864, further interrupted it, but by 1880 the movement was rapidly under way. In the decade 1930-1940, a period of great economic depression, the shift stops. The rural and urban percentages remain about the same, although when the rural is broken down into farm and nonfarm population, the farm shows an actual decrease in 1940 as compared with 1930. The nonfarm population includes those living in villages and suburbs.

This movement of the population to cities has taken the ambitious, the ones with initiative and courage. It has frequently left the rural community depleted of enterprising and capable folk, and whole regions, as in New England, have been left deserted. While it has been popular belief that the country is healthier than the city, there are statements that people in the rural districts suffer from more disease than do city people. The explanation offered for these statements has several items. These are the improved methods in the city for securing sanitary water and food supplies, and the effort made by city people to compensate for the handicaps incident to urban life.

This swing to the cities with its associated congestion in housing, limited play spaces, and decrease in natural types of recreation such as fishing, hunting, home parties, and picnics increases the demand on physical education for teaching skills and developing interests for recreation and for maintaining programs of vigorous outdoor activities.

Sedentarianism —But this swing to the cities has had other influences significant for physical education. It has operated not only to show a higher rate of developmental defect among city registrants, but to limit the range of motor education for all. Education of the hand in the use of tools and materials of craftsmanship is largely lost for the city child, for both boy and girl. Whatever special virtues there are in physical work—and some insist that they exist in real quantities—these are denied the city child, and, in the opinion of some, are not made up in the physiological returns of systematic physical education. Altogether, it seems clear that society has submitted to a pronounced change in distribution of population without feeling the need for correction of errors, nor having the confidence in its ability adequately to compensate for the handicaps of urban environment.

The hazards of the sedentary life run through the home, school,

and vocations. Provision for physical exercise of school children is not enough. These children must learn skills and acquire interests in physical activities which they will be disposed to continue after school days are over. There is no other way possible.

The Industrialization of Society—The development of the factory system has significant lessons for physical education. Although proceeding at a more rapid rate at the beginning in England, it gained momentum in the United States after the Civil War. An indication of the tremendous growth in industry is given in the growth of manufactures.

Between 1850 and 1940 the population of the nation increased nearly six times but the products of manufacture gained more than fifty-six times. For nearly one hundred years there has been a steady growth in the total value of manufactured products. These data correspond generally with the swing to the city and portray the growing industrialism of the United States. Many other evidences could be cited.

The factory system changed the American home and the life of the American people. Industry was formerly carried on in the home, giving developmental and training activities to the young. The home presented innumerable opportunities for the development of initiative, leadership, and responsibility. It furnished unique physical activities in the work and play life of the child. The modern bungalow, with its narrow strip of lawn and backyard sufficient only for a clothes line and ash can, and the modern apartment house of the cities, are products of a kind of adult organization of society for economic gain through industry in shops and factories. They fail to provide the kind of opportunities required for the proper development of children. In less than one hundred and fifty years we have explored and exploited our natural resources, we have tilled and reclaimed the soil, we have stretched in all directions over 30,000 miles of railroads, we have built great cities, and housed there the teeming millions, we have recently taken a world position in international trade and international banking. But the biologic nature that has marked man for probably at least 50,000 years is not to be changed in one hundred and fifty years. The demands of the organism for developmental physical activity persist, and the factory system and city life reinforce the need for physical education.

Machine labor has reduced the hours of work for man. Industry has been organized for production so that with fewer hours of work more goods are produced.

The Fair Labor Standards Act⁵ (1938), usually known as the wage-hour act, provides for a five-day week and an eight-hour day. The argument for this legislation involves not only the welfare of the worker but also the economics of production. Industrialization has increased enormously the production of goods and now legislation increases materially the leisure of man. While the evils of the factory system with the accompanying herding of workers into slums near the plants have long been recognized as inimical to the health and vitality of man, the collectives achieved through socially wise legislation controlling hours, wages, housing, and working conditions may be adequate to protect against the obvious hazards of the machine.

Other serious problems, however, are created. Leisure may not be an unmixed blessing for either the individual or society. Free to live as one desires may produce wholesome and constructive lives or it may not.

Leisure time education presents a problem to all education and particularly to physical education.

Women and Children in Industry—Moreover, physical education becomes in this modern world of supreme importance because of the taking of women and children into industry. Women and children have always assisted in the work of the home, and even when that was the labor of home industries. While some aspects of such home labor are not commendable, since time immemorial spinning and weaving, and the fashioning of garments had been the peculiar task of the housewife. The advent of the factory system changed all that in most homes, and in the textile industry the women and children followed into the factory. Child labor and employment of women in industry have since been tremendous social problems, because the effects of factory life on these individuals have been especially harmful. In some industries, notably in the manufacture of cotton goods, hosiery, hats, caps, gloves, millinery, umbrellas, in the canneries, in textile factories, the women outnumber the men. The number of women in industry,

⁵ Wage and Hour Manual. Bureau of National Affairs, Washington, D. C., 1940.

however, has fluctuated. With the advent of the first World War, and the call to military service of the able-bodied men, the women were naturally drawn into munition making and associated activities. During the depression the number decreased and now in 1942 the number is rising due to the war and the increased need for the production of war materials.

Strange as it may seem, efforts to protect women in industry are met by opposition from groups of women who are so interested in the principle of "equal rights" that they are willing to sacrifice their sex to establish a principle which makes the results of "equal" labor unequal.

The labor of children under sixteen years of age is prohibited under the Fair Labor Standards Act.⁶ The long fight to protect childhood from the blighting effects of the factory and mine seems to be won.

The labor of certain women in industry impairs their procreative functions, and is distinctly dysgenic, opposed to all the biologic and social values of real significance to physical education. In general, it is distinctly bad for the race, although the experience of certain women may be cited to the contrary.

World Leadership—Finally, the economic influences in America flowing out of the World War have their bearing on the problem. The United States is in a position of world leadership economically. The world struggle for oil, for coal, for rubber, the expansion of markets and the fight for commercial supremacy, the foreign loans and the commitments of international banking flow back into the industrial organizations of the nation to stimulate production, to eliminate waste, to lower production costs. These influences are directly pressor in type, speeding up the demands on the physical organism. Corporations, business houses, department stores, and similar large organizations are attempting to meet these hazards by welfare departments and recreational facilities. The economic loss in terms of sickness, inefficiency, and fatigue prompts the effort. It remains, of course, a pertinent question whether or not such attempts fully compensate for the strains, losses in vitality, and impaired national vigor. If they do not, the problem remains. As such, it has meaning for physical education.

⁶ Children fourteen to sixteen years of age may work under conditions set by the Children's Bureau, Department of Labor.

This problem may be resolved into high pressure work and more leisure time. Without the traditions for holidays, the siesta, and other customs that favor play, rest, and recreation, and with the traditions of "the strenuous life," that grew up in a nation engaged for generations in conquering a continent, it will be necessary to carry on considerable educational efforts to teach and lead people in the use of leisure. Physical education must develop programs which will give skill in activities that are capable of use in leisure time, and must assist in the development of attitudes toward life, glorifying the wholesome use of leisure in recreative and expressive forms.

An Interpretation of the Economic Standards.—This brief statement of problems which deserve continued study points the way for physical education. The recital of problems often leads to a partial view, and particularly in these days of sharp criticism of the social and economic order. There will be found many accomplishments in these years favorable to human health and happiness. One should not be too readily misled by the critics who see only the failures or only the successes.

The winning of the West was a triumph of hardy, adventurous stock which tamed the wilderness. The first settlers were the pioneers, who hunted and fished to maintain themselves while a cabin was built, a piece of land was cleared, and some simple agriculture started. As others came, it soon became too crowded for these daring spirits who needed more "elbow room." So they moved on westward to work the same process over again.

Another wave followed and flowed over the simple, scattered settlements. The settlers of this group cleared the land for fields and crops appeared to reward their efforts. They built roads, school houses, and new homes.

A third group came to exploit the resources of the conquered land. Men of capital and enterprise soon organized the uncoordinated efforts of the community. Churches, colleges, and business districts were built and all the signs of thriving civilized life appeared.

Life in these developing communities was often significant for those who lived it. There is a certain blindness in people which prevents them discerning the meaning that others find in simple, rough, hard, and adventurous experience. Just as no social order is

all bad, neither is it all good. The historian who recounts the glamorous events of the pioneer stage and the winning of the West should tell the whole story. By no means, therefore, should he omit the ominous facts that as city life developed, it brought with it jails, hospitals, clinics, reformatories, asylums, and other signs of man's efforts to care for human maladjustments in the march of civilization. The economic influences sufficiently deadened to the human and biologic needs of man court only a final disaster. The organism slowly adapted to sapient life through thousands of years may not be required too severely to adjust in one hundred and fifty years. The wholesome life of a nation should not be put in jeopardy by a narrow view of economic values. Unless living becomes increasingly more worth while, happier, and kindlier, and unless man retains the power to enjoy, economic gains are hardly justified. To have wealth and not to know how to use it is a social loss, to have leisure and not to know how to use it is an individual and social disaster. Ever to interpret economic success as a measure of social worth or personal fitness is to assume a condition that is denied by history and invalidated by the experience of countless persons who have tried so to do. Obviously physical education must try to understand the profound influences of economic forces on human life and prepare itself to plan programs intelligently in relation to basic human needs.

Such planning will consider the lack of vigor and stamina in men and women, the prevalence of crime and delinquency in youth, and the tremendous increase in leisure time. In the face of these realities, physical education must plan for vigorous, adventurous, functional programs of activities. Games and sports of combat and contact type, contests of skill and alertness which will appeal to adventurous youth, and skills and interests which will carry over into leisure hours—these are the heart of the matter. The modern economy of the power age produces weakness, degeneracy, delinquency, and boredom in man who can be rescued from these dire results only by forms of living which are revitalizing, energizing, and motivating to wholesome behavior.

Social Forces and Physical Education—The tendency of physical education is to reflect the influences of social doctrines and ideas of the time. European physical education, developed in the United States in the Nineteenth Century, illustrated prevailing

social ideals in Europe and, to the extent that such persist, it reveals today the sanctions of another century

The European type of education was favored in America, largely because of economic influences. A system of gymnastics could be introduced into the classrooms of the school, because it required no apparatus, because it aimed to correct physical defects, and because it did not require trained teachers, but it could not be extended and developed as a general form of physical education for the people unless its principles, as exemplified in methods and materials, were in harmony with fundamental social doctrines in American society.

The worth of any practice depends upon its service to the ideas, needs and nature of the people of the time and place. In comparison with other efforts in other periods of time and by certain common standards, it may be superior or inferior but its supreme merit lies in the measure of fulfilment it gives to hopes, desires, and aspirations of human beings. Whether the contrast is made between home industries of a by-gone age and modern factory methods, between pastoral life with its flocks and herds and modern industrial life with its noise and haste, or between the wireless and pony express, airplane and stage coach, or between daguerreotype and photograph, the excellence of each is relative to the ideas, needs, and nature of the people of the time and place.

The drive among all people to build new structures, to develop new plans, to organize for new ends arises out of their desire to make practice conform to ideas, needs, or nature. Physical education as a response to such forces is a modern, alert, and invaluable agency. To discover something then of the typically American needs, to discern national traits and purpose, and to understand American ideals and purposes—this is indeed important.

Social Ideals and Programs—The moment Andrew Jackson was elected President, in 1828, the advocates of European gymnastics had no chance of any nation-wide extension of systems of physical education. The social ideals constantly coming to the surface of our national life since that time were embodied in such phrases as, "the worth of the common man," "the rights of the common people." Lately, others have been expressed which further individualized the person, such as, "respect for personality."

Moreover, new interpretations of the question, "What is the

chief end of man?" have been largely shaped by the prevailing social ideals. To an increasing degree, in the twentieth century, the biological answer to the question has been expounded. Fortified as it has been by the discoveries of science in many fields, the biologists' answer has been, "to function." This answer meant clearly that the purpose of life was to live, to live completely, intensively, fully, to function in every aspect of one's being. This view not only failed to support the European concept of physical education as a military, drill-like, hospitalized routine, but, indeed, favored a view that physical education should be joyous, expansive, and developmental of all aspects of the individual.

Throughout all discussions of education the theme of equality has been sounded. The Declaration of Independence announced that "all men are created free and equal," and although the notion of equality has expressed itself in absurd, inaccurate, and wholly indefensible ways, the effect of the idea has been to further the movement for American rather than European methods in physical education. It should be kept clear, in all discussions of physical education, that no confusion exists regarding political and biologic equality. Inequality exists among individuals in character, intelligence, courage, and personality. All that the social ideals of the day demand are opportunities to develop the maximum in the qualities possessed. To secure this equality of opportunity, society must be free from the "frozen strata" that mark so sharply European and Oriental life. Correspondingly, all forms of physical education must rely not upon the devices and methods of a class-bound civilization, but must devise ways and methods susceptible to free development of individual worth.

Proficiency and Participation—People by nature do that which gives them pleasure and satisfaction. While it is urged that people should play, it is not always understood that physical illiterates are unable to play. They lack skill. Interest may be aroused by the recital of values that accrue, but without skills that yield satisfaction in achievement, participation lags. The extent to which modern life dwarfs and twists nature is suggested by the large number of persons who do not know how to play. A trait, that practically all children possess—the ability to play—and that attains some development in many, is starved in the social life of an industrial world. The mechanical devices of commercial amuse-

ment further restrict the expressive powers of man. The radio and movie demand only simple sensory response, and the need for expressive, cooperative skill activity remains. The immediate need in schools is the education of all boys and girls in several motor activities that have recreative uses and that will yield satisfactions. When young persons have been *physically educated out of the dub class and into the enjoyment class*, the participation problem is on the way to solution.

Self-expression and Self-realization—The free development of the individual is nourished by powerful biologic impulses. The impulses that carry us forward powerfully urge to individual self-expression and self-realization. Acceptance of this fact need not frighten those really interested in the social welfare. Self-expression is not a synonym for selfishness, regardless of instances in which that relationship mistakenly occurs. Selfishness as frequently, or more frequently, occurs in individuals who have stunted and shut-in personalities. Consideration for the rights of others is more and more focused in the social consciousness, and self-expression and self-realization are being interpreted in the light of one's relation to others. Ross puts this position strongly in the following words: "The problem of making a winning race is not, as some suppose, to blend cleverly certain egoistic with altruistic qualities—as well mix oil and water—but to unite the pushing, combative disposition and reflectiveness in such a way as to develop the conscientious individualist."

Physical education in the interpretation of man's biologic needs and the social ideals of the time and place must face quite clearly the issues presented by the theory of formal discipline, the philosophy of effort, and the military goals of aristocratic classes and totalitarian states.

The Pioneer Spirit—The frontier in America has passed. The West has been won. From coast to coast highways link together lands which little more than a generation ago gave a home to the American Indian, herds of buffalo, elk and wild horses. The frontier is indeed gone, but the spirit of the pioneer which developed and flourished in that scene remains in numerous expressions of American life. Independence, initiative, individuality, adventurousness, competitiveness—these are American traits that mark the American character.

It would appear, therefore, that physical education will do its best work in rugged, daring activities which call for independent judgment, exercise initiative, and promote competition. The safe and sane physical education of antiseptic calisthenic movements can never appeal to the American nature as long as this trait survives. Athletic games present many crudities and harbor many undesirable practices, and in comparison with English sport, they appear in many respects less admirable. They are typically American, however, and in the correction of mistakes and the elimination of undesirable forms, care should be taken to avoid sterilizing them.

Rhythm in American Life—We are a people with a characteristic jazz music. Many at home and abroad criticize us for this. One may hold no brief for jazz as against classical music, and yet one may recognize that a pulsing rhythm brings a response from Americans, softens lines in faces, and lets down the tension of modern urban life. The simple rhythms of the drum in modern dance moves from traditional and toward new forms in music. This trait readily explains why rhythmical activities of dance have become so popular in physical education. Without the stimulus given through a social tradition which required dance, and in the face of considerable opposition to dance, this type of physical education has consistently gained social approval.

American Practicability—It is often observed that we are a practical people. In education, as in business, industry, and technical fields, the criterion of utility is often raised. For years education has been demanding results which would function in the lives of people today. This has meant a reshaping of curricula from the kindergarten to the professional school with substantial modification of courses and offerings.

This movement for a functional education has also developed in physical education. The criterion of functional utility, if applied wisely to our activities, would rid our program of innumerable games, stunts, and movements whose only excuse for existence is the plea of variety. Any activity which has no other justification than variety is worthless in a modern program today.

And yet utility alone is not enough. It never is and never can be the one standard of worth. There are aesthetics, leisure activities, and recreations which appear to have no practical slot in which to fall. Relative values must always be weighed.

The Break with Authority—Americans in common with certain other national groups are undergoing a revolution with respect to tradition and authority. German, Russian and Italian ideologies have retreated through political dictatorships to command action, authoritative statement, and established tradition, but the liberal spirit is very much alive in American life. The most obvious evidence of this revolt is seen in the church. The conflict between those called modernists and those known as fundamentalists is real, sharply drawn, and highly instructive.

The same break with authority which marks religious circles has appeared in educational institutions, political parties, and labor unions. In education it is becoming increasingly popular to ask for facts upon which to base procedures. The movement has touched physical education too. And yet breathing exercises remain in programs. Posture is still regarded as only a matter of muscles, and many have failed to sense what the facts about the endocrine glands mean to physical education. Authority and not facts too often guide.

Physical Education and Social Delinquency.—Sickness, like famine, storm, and earthquake, has been regarded in the past as a calamity and when calamity fell the gods have been invoked to relieve man from the full force of their displeasure. While in civilized lands scientific attitudes have largely replaced such superstitious practices, there remain forms of sickness which are treated after the pattern of seventeenth and eighteenth century witchcraft. Man, an organism, suffers from disturbances that attack the functions of his internal organs, these phenomena are called diseases, are diagnosed as to cause and treated as such by scientific medicine. But man, the organism, also suffers from disturbances in behavior and social relationships, these phenomena are called crimes, are often diagnosed as due to "evil nature," or similar mystical forces, and are treated commonly by placing the individual in a prison, which has been justified by the theory of punishment and protection of society. In diseases, the causes are micro-organisms, poisons, accidents, deficiencies in certain chemicals, malformation of parts, confusion between emotional and psychic factors, and new growths. The genius of scientific medicine is differential diagnosis and accurate prescription. The folly of placing all sick persons in the same kind of hospital and of pro-

viding the same treatment for all would be recognized today even by lay persons

It is true also that the disturbances in behavior which characterize the social driftwood in prison arise from many causes. There is no one person responsible, no social cancer that explains. Moreover, it follows that any social behavior which produces crime and results in imprisonment is a disturbance that calls for a modern scientific approach to the problem. Unfortunately, there is lacking the technics in diagnosis, the competent laboratory findings, the experience with varied therapies in the field of individual socialization that exist in medicine. Some technics are available but little progress in this direction can be expected until there is a new attitude toward the problem and the purpose to punish for crime is replaced by the purpose to rehabilitate the individual. Medicine seeks to restore the sick to normal but is without illusions in the matter, some patients are too ill or have waited too long for medical skill to prevail. Nevertheless the attitude of seeking to cure is a vital approach to the problem of sickness. In similar fashion, the purpose to rehabilitate the individual may exist as the dominant mood of an educational and social policy without meriting the charge of being sentimental, unprofessional and unscientific.

The notion that hospitals are merely places to protect society against communicable disease is untenable today. Likewise is the concept that prisons, jails and reformatories are merely measures to protect society from the attacks of the maladjusted. All these institutions must be seen as a part of the complex congeries of forces which has been devised by man for the development of people. When society makes it impossible for boys to have the thrill of wholesome struggle, and for girls to know romance and sweet adventure it constructs problems for itself and the answers formulated by correctional and rehabilitating institutions are not to be viewed unrelated to social lapses or in traditional fashion. Correctional authorities must acquire an attitude comparable to that held by medical authorities. The latter expect and desire to return their patients to the world cured of their health disturbance. Correctional officials are no less obligated to seek a therapy for the individual which promises well for his future social health.

If this new attitude with respect to antisocial behavior is to prevail and have influence in prison administration, there are several fundamental concepts which should be understood.

Unity of the Individual—The disposition of many persons today to regard the criminal as a person with "free will" ignores the influences and forces that have played upon his human materials. What a man is at any moment comprises a complex mosaic of his past, his present organic balances and equilibria, and the forces of his environment. To conceive of man as a body governed by a mind, or a will, or a spirit is as superstitious and uninformed as to regard him as "bewitched" or "possessed of devils." Such ideas of his nature are on a par with spontaneous generation in biology, phlogiston in chemistry, horoscopes in astronomy, and forked sticks for finding oil or water in geology.

The Continuity of Experience—Man can only be understood and hence educated or rehabilitated as we interpret correctly the play of forces upon him over a long period of time. The boy who steals apples from a fruit stand when he is not hungry performs an incomprehensible act unless earlier racial experiences are examined.

It is important to stress the continuity of experience and the record left in each individual not only of what he does but of what his ancestors did. This point stressed by Bergson lays upon any understanding plan for education the necessity to see that what persons do is more important than what we say to them. The appeal of dramatic emotionalism unduly clutters up the hopes of those engaged in reeducation or rehabilitation of human derelicts. Thus, to place humans in prison subject to a wide range of indignities and indecencies and to expect them later to emerge chastened in some miraculous way is naïve at least.

A child born today comes into this machine age with certain organizations that enable him to live as an organism. There are respiratory center, circulatory center, sucking reflexes, and other mechanisms ready to operate in any appropriate situation. He comes also with drives to engage in certain types of activity which played vital parts in persistence of the species. When his ancestors had to settle their differences and maintain their lives by physical struggle, there came into action certain dynamic and energizing forces of the organism. This selection of forces is described today in the researches in endocrinology and the stim-

ulation of adrenals with a corresponding inhibition of digestion in fighting situations is recognized as the patterns of racial memory in every child born today

The preparation of youth by nature is suited to a by-gone age. The harsh realities of an industrial society call no more for courage in facing wild animals, speed in flight from other men, nor the capture of one's mate by force. Many communities are so industrialized that the only remnant in environment to meet this irrepressible urge of phylogeny is a moving picture in which youth vicariously is heroic or strong or victorious.

Thus, it appears that the individual prepared by nature over thousands of years for a life of physical struggle is catapulted into a society that scarcely knows what this means. The necessity of providing an equivalent has been recognized, however, and physical education exists as a great constructive social force to guarantee to youth the fulfillment of these early adaptations.

Prepared by Nature for Action—Unity of the individual implies that in situations which provoke fear in the organism, the functional systems open up the old switches and call into action the adrenals, heart, thyroid, and inhibit the digestive and procreative functions. This occurs even when no physical effort is involved so that today under modern conditions the whole organism may be raised to levels of great activity without any corresponding physical response. In this phenomenon every cell of the organism may be stimulated and the urge to find expression is correspondingly great. Most of the early crimes of youth are not sought as ends in themselves, they are sought as thrills and are the logical product of nature and nurture. The society that will not give youth a chance to make an end run, or tackle a charging back, or beat the runner to a base by a perfect throw, must of necessity take these into custody when they steal and run and hide.

It is obvious, of course, that all that we are socially reflects not only yesterday but a thousand yesterdays. Our ways of thinking, our emotional reactions, all that Sumner described as *mores*, molds our judgments of what is right and what is wrong.

Equally obvious to the scientist is the force of biological inheritance in each individual. Before the child of the twentieth century is born, he lives in a short time through countless ages of the past. To watch his development is to survey the whole panorama of

man from the lower creatures that once he was—to see the possibilities in mental power and physical form become certainties—to see growth. Great areas of that past can only be guessed at but its brief outlines are tremendously significant in understanding human behavior. We should never forget that man not only lived in trees, sought shelter in caves, and uttered weird cries, but also that he lived in the Middle Ages. Those dark centuries imposing all sorts of absurd notions upon him, even lead us astray today as we continue to perpetuate outworn ideas of prisoners, delinquents, causes, motives, and effects. The past that each child drags after him as he is born into a world also with a past—the past that clings to him—unescapable, as closely as a shadow and yet as clearly as substance, is himself—his muscles and bones, his spinal cord, his organs and numerous glands.

Delinquent Social Institutions—The principle of substitution is important. It is a well-recognized fact that the individual is continuously active when awake. There are always situations to which the organism is responding, internal and external receptors are continuously acting, and life flows as a stream of reactions. Moreover, it is also recognized that experiences shape what is called character, that complex congeries of reactions, reflexes, balances, ideas, habits, and predispositions, or stated philosophically, it can be said that man makes his life by the experiences he has. This view makes insistent demands upon educational and social policy because perforce he must live the life he makes. Any intent to rely upon revivalism stamps this purpose for what it is—ignorant and superstitious. Society must provide and guard the experiences of youth and by the principle of substitution offer those that are socially wholesome and constructive for those that result in anti-social behavior.

The rôle of physical education in the life of youth was indicated centuries ago when the chiefs introduced youth to the customs and practices of the tribe. Delinquents are the product of a society which has failed, sometimes in its biological controls, usually in its social program. The great social agencies such as the schools, the clubs, and playgrounds are man's organizations to develop youth. The literary emphasis in the schools directed at training the mind, the starvation of clubs and the pauperization of playgrounds—these shortages and others manifest themselves in rural as well as

urban centers. The evident failures of these social agencies are the delinquents and criminals of today. To correct these failures society as yet has been unwilling to set up social institutions and provide a community life in which youth might succeed in development, but moved either by sentimentality or fear, it has established jails, asylums, hospitals and reformatory institutions.

Defects of Function and Delinquency—The relationship of leisure to crime and delinquency has been frequently pointed out. The Commission for the Study of the Educational Problems of Penal Institutions for Youth reports

"Maladjustments in the social and economic life of modern society provide the background and causes for much of the anti-social behavior of delinquents and criminals."

Human conduct is socially conditioned, life makes any individual peculiarly what he is.

Austen McCormick says that 60 per cent of criminals have physical defects. These may be very important items in behavior and yet by stressing such defects we may forget that they relate to structure. Delinquency is a behavior defect, however, that is a defect of function. Since all delinquents show 100 per cent defects in function with respect to social conduct it is important to note that functional defects in play, dramatic expression, romantic love, hobbies, friendships, marriage and family life comprise a most significant part of the delinquent's total picture as a psychophysical organism. Such defects of function occurring in young persons may be more influential factors in causing delinquency than defects of teeth, tonsils, eyes, ears, and feet.

Social Forces Antagonistic to Physical Education.—The growing interest in modern physical education confronts opposing attitudes which constitute a strong and often highly vocal opposition. To the extent that these antagonisms prevail, physical education is hampered in its program.

Fear of Play—Fear of play goes back to old experiences of man with attempts to escape from the drudgery of work. Man has always played and to some extent the old forms remain in drinking and carousing, gambling, and sex activity. Commercialization of

⁷ Report of the Commission, Legislative Document, No. 71, 1937, p. 60. Albany, New York.

the play interest in the past has produced the saloon, various institutions for gambling, prostitution in the brothel or house of assignation. It is not strange, therefore, that play of the past has left marked prejudices behind, nor that even the play of children should at times be viewed critically by those who are moved to recite that life is real and life is earnest. In the light of this experience it is easy to understand the word and temper of the *Methodist Discipline* of 1792 outlining the policy at Cokesbury College toward play. It says,⁸

"We prohibit play in the strongest terms. The students shall rise at five o'clock summer and winter. Their recreation shall be gardening, walking, riding and bathing without doors, and the carpenters', joiners', cabinet-makers' or turners' business within doors. The students shall be indulged in nothing which the world calls play. Let this rule be observed with the strictest necessity, for those who play when they are young will play when they are old."

Old Moralistic Ideas—The old proverb, "The devil finds work for idle hands to do," phrases an old prejudice against play, leisure, and loafing. It glorifies work but is afraid of play. Generally the professedly moralist regards the theater, artists, and those who play as exerting an immoral or at least an unmoral influence in society. It is heartening to read Dewey's comment upon this problem. He writes,

"When moralists have not regarded play and art with a censorious eye, they often have thought themselves carrying matters to the pitch of generosity by conceding that they may be morally indifferent or innocent. But in truth, they are moral necessities. They are required to take care of the margin that exists between the total stock of impulses that demand outlet and the amount expended in regular action. They keep the balance that work cannot indefinitely maintain. They are required to introduce variety, flexibility and sensitiveness into disposition. Yet upon the whole, the humanizing capacities of sport in its varied forms, drama, fiction, music, poetry, newspapers have been neglected."⁹

And again, writing of play and art, he adds,

⁸ Youth Leaders Digest, December, 1938, p. 195

⁹ Dewey, J. *Op cit*, p. 160

"They both spring from failure of regular occupations to engage the full scope of impulses and instincts in an elastically balanced way. They both evince a surplussage of imagination over fact, a demand in imaginative activity for an outlet which is denied in overt activity. They both aim at reducing the domination of the prosaic, both are protests against the lowering of meanings attendant upon ordinary vocations. As a consequence, no rule can be laid down for discriminating by direct inspection between unwholesome stimulations and invaluable excursions into appreciative enhancement of life. Their difference lies in the way they work, the careers to which they commit us."¹⁰

The Puritan Tradition —The Puritans feared emotions, largely because emotions and religious sin were frequently associated. This antipathy to emotions in general was felt against play in particular because all play has large emotional possibilities.

In these days, play and self-expression are respectable. The emotional life is recognized as a fact to be understood, and hence, the responsibility to deal with it as such. Nowhere are there greater problems in health or in education than in this field of the emotions, and yet there are certain antagonisms to physical education, because of the play of emotions, and the emphasis toward self-expression.

These are problems for directors of physical education. How can we use self-expression in physical education to secure worth-while educational results? How can the emotions be given opportunity for expression, and help in the development of the "conscientious individualist"? How can we organize activities to retain the joyousness and spontaneity of play without the hysteria, inefficiency, and emotionality which so often accompany our activities? How can we secure the benefits of self-expression and avoid the disadvantages?

Fear of emotions and sense activity arises out of the curious notions of spirit and body which prevailed in an ascetic period of life. The philosophy of asceticism has long ceased to exist as an active and powerful force, but the ideas of a time which saw the body as base and the supersensual as alone worthy, are reflected today in attitudes, conventional standards, customs and scales of values.

¹⁰ Dewey, J. *Op cit*, p. 163

The pleasures of emotional experience and sense activity, however, have been identified with thrills, stimulations, and actions that have disregarded outcomes. They have stood therefore as evidence of dissipation and dissolute living. But if the test is to be results, then emotional activity and sense experiences are not to be condemned out of hand. A thing is good or bad, not by the name given to it, but by what flows from it.

The emotions and sense activity in games, art, song, dance, drama and nature may add fresh and significant meaning to life, deepen and mellow the personality, widen the sympathies and understandings.

The dance has long been suspect, although it stems from religious ceremony, over the years, its association with the theater has given it a bad name. This attitude of antagonism to dance is so real that certain communities in the United States do not permit dance to be taught in the schools—even folk dance is barred. Such restrictions extend particularly to social dance which is clearly romantic and may even be erotic. But again, giving an activity a name, pasting a label upon it, may do serious damage to the possibilities of experience. Young people will dance, will engage in romantic expression. This is inevitable. The school might, with a wisdom quite beyond usual expectation, recognize this fact and provide that kind of opportunity and leadership which educational and social understanding ought to give.

Such opportunity and leadership will need to consider some very real aspects of American life. Some may be listed here: the limitations of space in city life, the loss in effective opportunity for physical work, and the lack of intelligent substitution of other comparable activities, the need for education in use of leisure time, recognition of the growth and developmental needs of children, interpretation in programs and methods of the worthy, deeply-ingrained traits of the people, direction of physical education in relation to recreational opportunities, improvement of facilities for recreation of the active, participating kind, orientation of the aims and objectives of physical education to express the best social customs of the day in the light of legitimate near and remote aspirations, and development of the program of activities to reflect good manners, to foster wholesome character and to maintain vigorous and dynamic individuals.

The Academic Mind—The most consistently hostile influence to physical education is the general educator devoted to the traditional school, its purposes and established curricula. Although he gives a superficial lip service to the objectives announced by his own colleagues, such as health, worthy use of leisure, and recreation, he is supremely indifferent to changes in the school curriculum by which the persistent problems of today can be solved. He cares nothing about stamina, strength, endurance, vitality, and physical courage, delinquency is to him a matter of heredity and the issue of leisure time is to be solved by reading and religion.

Traditional education is antagonistic to physical education in precisely the same way that the classics were opposed to science coming into the curriculum. Vested interests, institutionalism, established values look with suspicion upon all new approaches, new goals, new activities. Often they support their position with the elevated and respectful regard for ancestors by observing what was good enough for father is good enough for son. On this basis, of course, the modern science of nutrition would have no contribution today, for son would then grow on the same diet of meat and potatoes which fed his father and the vitamins and minerals of the modern diet would be completely disregarded.

The academician is either antagonistic to or merely condescending about physical education. Perhaps it may be good for one's health, but this perspiring vigorous activity is not to be considered beside the contemplation of beauty or the facile verbalizations of an alert intellect. Muscles are necessary, but they are not in the same category with mind. Thus an academic fastidiousness without wisdom looks down its nose at the physical.

And yet in spite of the strength of the forces which oppose the humanizing and socializing science of a rationally conceived physical education, advances in appreciation and understanding occur. Play has a larger rôle today in the American culture, the emotions and sense educations draw fresh support daily from psychology and psychiatry, the dance—especially in modern dance—is the most vital art found in American life, even curricula are changing, and academicians are retiring to the cloistered quarters which promote their most congenial occupations. Antagonisms persist, but understandings increase. An example of this understanding is

given in a recent discussion by Harlow of sociological trends in college and university

"It is true that higher education today appears to be more responsive to external social forces than it was in the past but little is being done by our colleges and universities to modify the fundamentally aristocratic Greek system which continues to be triumphantly dominant

"Is the aristocratic educational philosophy the only sound one for man, or should a democracy such as our own be able to develop a philosophy more nearly in tune with its needs and possibilities?

"Our institutions of higher education are still far too traditional, hide bound, and inelastic They are not enough in tune with the needs of the time, too few of them give to the young men and women enrolled in them the training necessary to produce the most effective type of citizen Old needs are constantly merging into new needs, to be consistent the old system should merge into a new and better system That is the only satisfactory path which lies ahead"¹¹

Political Influences and Physical Education.—In the earliest social groups, with the head man of the tribe or clan director of the social life, physical education, as we know it today, scarcely existed The activities of primitive life gave a kind of training which served the tribe, or in due time it ceased to exist as a tribe A great weakness in clan life was the waste of time and energy in quarreling or war, due largely to the fact that man had not learned to live in large groups In addition to war, the warlike activities of the hunt, the chase, the test of strength and skill in personal combat have exerted a selective influence in the perpetuation of types The clan organization produced the head man or chief, and, with elaboration of this grouping, or combinations with other groups, it led easily to the king The promotion of chief to king, and the change from a wandering or nomadic life to village and community life, tended to continue the customs and taboos of the tribe or clan The warlike qualities persisted, and even offered the rich opportunity for increasing his power, or avenging his wrongs

Reliance upon the military virtues has persisted through marked changes in political organization of society Loyalty, courage, and

¹¹ Harlow, R F Sociological Trends, *Journal of Higher Education*, November, 1937, pp 403-412

chivalry go back to clan and tribe for their origins. That these virtues are associated with war is not questioned, that they may be secured from activities other than war is also vigorously held, as pointed out by William James¹² in his memorable study, "The Moral Equivalent of War."

Physical Education and War Service—This chief and clan, king and subject relationship, believing in, fostering, and abetting war, influence physical education, so that in addition to the notion that physical education was a corrective measure is the one that its purpose is preparedness for military service. Whereas the corrective notion is an outgrowth largely of economic influences, the military one is a reflection of political persuasions.

The state with the king at its head is a political society, concerned with the execution of plans which will retain that relationship. It is first a military group, and secondarily a governing group, with all the gradations of class and rank in a society fashioned to favor the king-idea. The theory of the state as something set apart, above and beyond the people, the divine right of kings, and the godlike quality of priests and potentates have all been used to provoke submissiveness and fear in the masses. The control of the common people by those in power has meant almost universally an exploitation of them for state, imperial, or military, that is, for political purposes. Throughout the Eighteenth and Nineteenth Centuries the increasing growth of nationalism as a form of political organization has tended to irresponsible empires, and yet, in the life of most modern nations, physical education has served the king. Thus, one is to read the history of German gymnastics in the light of Frederick's armies marching through the Germanies wasted by war, in the annals of the War of Liberation, and in the urgency created by the traditional enemy to the West. Physical education in Germany served the king. Its function as a disciplining, body-building activity goes back to such sources.

The relation of the individual to the state, to the king, the priests, the ruling groups has always been a significant one for physical education. Since the dawn of history, kings and priests have found it profitable to inculcate docility and obedience in the masses. To perpetuate the squalid belief in witchcraft, the divine right of kings, the idea of class birth and class vocation have ever

¹² James, W. *Memories and Studies*, New York, 1911, p. 287.

been the chief business of those in certain political groups. These general attitudes have then special bearings in vital ways, affecting the health and happiness, and the development and fulness of life in human beings. They permitted in England, for example, as late as 1818, two hundred and twenty-three capital offenses known to law, they perpetuated serfdom in Prussia until October 9, 1807, when Stein issued his famous Edict of Emancipation, they denied the common rights of suffrage in Sweden throughout the Nineteenth Century. Numerous illustrations from other nations could be cited to illustrate the argument.

Even in democracies, the importunate character of the military sanction for physical education is shown in the hysteria of legislation for military drill in public schools which follows the beginning of every war. The graph indicating the incidence of this disturbance approximates the one for national strife in America. The function of physical education as an agency not only for organic development and vitality, but also for happiness, richness of life and joy is not the view held by the average person. The warping of the possibilities of this educational agency is due to the pertinacity of the military idea, maintained as it has been with the argument of professional soldiers.

It should be clear that physical education is not pacifistic when it opposes military training of high school boys as a physical training measure. It is evident that strength, courage, stamina, and agility—important qualities in the soldier—are to be developed in youth through vigorous activities and not by means of the formalities of military drill. In these perilous days there have been bills introduced in the Congress and in several state legislatures which would require military drill of high school boys. Legislators are so uninformed in biological matters that considerable effort must be expended to prevent the imposition of such frauds upon the youth of the nation. The way to vigorous physique, strength, and courage is through strenuous, adventurous, and challenging exercise. There is no other way. This is a function of physical education and not of military drill.

Centralization of Power—When political power is dispersed among local communities, the determination of policies and the financial support of policies are the responsibility of local government. The American public school system has grown and devel-

oped under this theory of democracy. Moreover, there is the principle that the schools belong to the people, not in general, but in particular communities which build school buildings, hire teachers, and fill the schools with children. Under this kind of political control, American public school education has looked to the states for leadership, and over the years, some centralization of power over educational policy has shifted from the local community to the state. The state controls licenses for teachers, enacts compulsory attendance laws, and may set standards for school buildings, curricula, and credits. Even with centralization of power in the state, there remains in the local community the conviction that the schools belong to the people, that the boards elected or chosen to direct them are local representatives, and that the kind of school provided reflects the desires of the locality.

The people construct the schools, and the schools belong to the people. When the people abdicate to a dictator, the dictation from a central source determines educational policy in precisely the same way that it manages the currency, controls industry and agriculture, embarks upon war, and shapes the life of the nation. The youth movement of the German Republic becomes the Hitler Youth under National Socialism. The local initiative, freedom in method, and varying programs in Germany during the years 1918-1932 disappear in the dictated policy of 1933.

Physical education is important in a democracy, or in a despotism, but the marching, the regimental drills, the formal discipline of the latter contrast sharply with the play, education for leisure, experimental method, emphasis upon initiative, leadership training, and similar objectives of the former. Americans can have the kind of physical education they want.

The Federal Government and Recreation—Before 1932, the Federal Government manifested little concern with recreation. The tremendous unemployment problem of the depression with its enforced idleness—not leisure—of people, seemed adequate justification for Federal activity to provide recreational facilities, to promote recreational programs, and to sustain recreational leadership. Between 1932 and 1937 the Federal Government spent for recreational facilities and leadership about \$1,500,000,000. This enormous expenditure reflects the growing appreciation of the need for recreational facilities. With respect to opportunities

for recreation the American Council on Education¹³ advises that nearly all youth should have opportunity to participate in sports, games and other outdoor activities, opportunity for creative experiences—to make things with the hands, to paint, to act, to build, opportunity for better social life, and opportunity for recreation at home

The development of recreational facilities by the Federal Government was exemplified in the enlargement of our national forests, parks, parkways, and other recreational areas. The total area of these resources is 21,000,000 acres. Of this tremendous acreage only 11 per cent of public land is east of the Great Plains, the great centers of population are also east of the Great Plains. It costs more to visit the national parks and forests than the majority of the population can afford.

Three new organizations within the Federal Government have contributed to recreation, the C C C, the N Y A, and the W P A.

The Civilian Conservation Corps (C C C) has engaged in many forms of outdoor work. Some of these projects were recreational facilities. Although the Federal Government spent millions of dollars for recreational facilities, it provided no recreational leaders in C C C camps.

The National Youth Administration (N Y A) has not concerned itself directly with recreation projects, although many on its rolls have assisted in recreational programs.

The Works Progress Administration (W P A) contributed enormously in construction of recreational facilities. It also conducted a Recreation Section to supply leadership for all types of recreation in local communities. In 1939 it operated in more than 7000 communities and reports more than 15,000 job locations. At the height of its activity the Recreation Section employed 50,000 persons in leisure-time programs, it is estimated that in 1939 more than 5,000,000 persons were participating in recreational activities under its direction. Moreover, some of the projects of other sections had recreational implications, as in the Federal Art Project, Federal Music Project, and Federal Theater Project.

The Schools and the Federal Government—It is evident on every hand that the public schools have failed to serve fully in meeting

¹³ Wren, C. G. and Harley, D. L. *Time on Their Hands*. American Council on Education. Washington, D. C., 1941.

the pressing needs of youth. Perhaps the schools as social institutions should not attempt to do more than is involved in a narrow academic curriculum. And yet they have tried to do more in a limited fashion. Since the schools belong to the people, then perhaps we should say that American fathers and mothers have failed to understand the urgent needs of youth. With respect to recreation it is clear that if society through the schools cannot attack the problem, then society through the Federal Government can. Experience of the past ten years shows that recreation is a necessity in modern life, that communities must either provide or accept leadership, that education is basic to participation in constructive recreation, and that financial aid from the Federal Government is essential.

The general educator often philosophizes about a wider use of the school plant and an identity between the school and community. Progress in public school administration is slow in this direction. In the area of recreation the situation is chaotic. It is not unusual to find public funds wasted because two community groups compete in recreation for the same purposes. It is not uncommon to find one set of recreational facilities constructed, equipped, and staffed for school children and another series of facilities prepared for non-school persons of the same community. In some respects the Federal Government has added to the confusion. Recreation organized and conducted outside local control loses the opportunity to foster local responsibility and so weakens the democratic tradition.

Summary—Summary of the basic problems shaping physical education in the United States suggests the following:

1. A theory of physical education should examine the economic, social, and political forces in a nation.

2. Physical education has been influenced by the changes incident to a rapid industrialization of society.

3. Since physical education is concerned with national vitality, such problems as immigration, alien unfitness, child labor, and women in industry are properly of profound interest to it, although it has no technic for their solution.

4. The swing of population to the cities increases the need for more play spaces, for maintenance of vigor in people, and for the teaching of functional, recreational skills.

5 The hazards of the sedentary life require that young persons should learn activities which they will enjoy and continue to use after school days

6 An industrial society produces more leisure but not necessarily more social good The *use* of leisure presents a challenge to physical education

7 Intelligent planning by physical education to meet the hazards produced by the influences of economic forces in society will center attention upon vigorous activities such as games and sports of the combat and contact type and will foster skills and interests for recreation

8 Physical education is modern when it reflects the dominant ideas, customs, and traits of American life

9 The social ideals of our democracy demand that physical education should be joyous, expressive, and developmental of the whole person

10 The pioneer spirit persists and requires a vigorous, adventurous physical education

11 The American reaction to rhythm emphasizes the need for dance in programs

12 Physical education should teach activities which function in life This is the practical test of a practical world

13 Authority and tradition are to be checked by the facts of science

14 The social ideas of an older age are antagonistic to physical education Old moralistic concepts, the fear of play, and the Puritan tradition must be combated by promoting a better living of the whole person than was possible under the reign of their ideas

15 The academic mind is a remnant of an older culture Physical education must prepare to expound an education of the whole man

16 Political influences have always been powerful forces in shaping education, and particularly physical education in relation to war, military drill, and mass exercises Whenever there is great centralization of political power and a disposition to regiment the people, then the techniques of physical education will be employed in drill, formal discipline, and response commands

17 The Federal Government has greatly extended its influence

in education and in recreation. The public school has failed to meet many social needs. The extended influence of the Federal Government will continue unless schools and communities recast their notions of the function of the school in modern society.

18 Recreation is not an individual but a community problem. Group action is necessary to provide facilities and leadership. The organization of leisure is possible only on this basis of community interests and cooperation. The most important communal unit is the family and opportunity for family recreation is also a community problem. This proper emphasis upon group rather than individual responsibility is even more apparent when the leisure and work life of the whole community is concerned. Hours of work, location of shops, housing conditions bear sharply upon the use of leisure and hence must be considered along with other community problems such as play areas, gardens, woods and fields, streams, theaters, athletic clubs, and other recreational features.

QUESTIONS

1 Why should physical education be concerned with economic, social, and political forces in American life?

2 What influence has economic forces upon education? Give examples.

3 What is the picture regarding the population shift in the United States? What meaning has this for physical education?

4 How do aliens and native born differ as regards physical fitness? Of what significance is this for physical education and why is your answer true?

5 What is the rural-urban situation as regards population? What is the meaning of this?

6 Why has sedentarianism arisen? What are its dangers? How are they to be combated?

7 What is meant by the words—the industrialization of society? Why does this present problems to physical education?

8 What is the hazard of women and children in industry? What is the Fair Labor Standards Act? What protection does it give to children?

9 What responsibility comes to a nation and hence to people when world leadership is attained? What are the hazards in the tempo of life?

10 How can the life of a nation be put in jeopardy by a narrow view of economic values?

11 How should physical educators plan to consider the influence of economic forces and to prepare a program in relation to basic human needs?

12 In this planning what items will be considered?

13 Why is the human personality important?

14 What is the relation between proficiency and participation?

15 How can you harmonize the needs of the individual for self-expression and the nation's needs for social mindedness?

16 What does the pioneer spirit suggest as regards type and quality of program?

17 Should a program include rhythmical activities? Why? What kind?

18 What does "to function in life" mean? Illustrate

19 Delinquency records show that the greatest frequency age distribution for boys and girls is fourteen to sixteen years of age. Why is this so?

20 Why is it reasonable to regard a delinquent as socially sick? What is the implication from such a point of view?

21 What obligation has society to children? How can this be fulfilled by social action?

22 Why do old moralistic ideas fail to serve persons today?

23 When play is feared, what happens in a school or community?

24 Why may sense experiences be worth while to the individual? What is your criterion of worth?

25 What are the problems of education today which are increased by the academic mind?

26 When is physical education very popular in the United States? Why is this so?

27 Why do citizens fail to object to proposals for military drill in high school?

28 Will centralized government be inclined to use physical education? What is the historical record?

29 What is the Federal program of recreation? How did this develop?

30 What is happening to the schools under the present Federal policy?

REFERENCE READINGS

- 1 Chambers, M M The Community and its Young People American Council on Education, Washington, 1940
- 2 Dewey, J Democracy and Education Houghton, Mifflin and Co, Boston, 1919
- 3 Frank, L K Childhood and Youth Recent Social Trends in the United States Vol II McGraw-Hill Book Co, New York, 1933
- 4 Glover, K Youth-Leisure for Living U S Office of Education, Washington, 1936
- 5 Hartwell, S Fifty-five Bad Boys Baker Foundation, New York, 1931
- 6 Hjelte, G The Administration of Public Recreation The Macmillan Co, New York, 1940
- 7 LaFollette, C T A Study of the Problems of 652 Gainfully Employed Married Women Home Makers Bureau of Publications, Teachers College, Columbia University, New York, 1934
- 8 Lawrence, D Beyond the New Deal McGraw-Hill Book Co, New York, 1934
- 9 Lindeman, E C Leisure—A National Issue Association Press, New York, 1939
- 10 Lin Yutang The Importance of Living The John Day Co, New York, 1937
- 11 Lumpkin, K D and Douglas, D W Child Workers in America McBride and Co, New York, 1937
- 12 Lynd, R S and H M Middletown Harcourt, Brace and Co, New York, 1929
- 13 Lynd, R S and H M Middletown in Transition Harcourt, Brace and Co, New York, 1937
- 14 Odum, H W and Moore, H E American Regionalism Henry Holt and Co, New York, 1938
- 15 Overstreet, H A A Guide to Civilized Loafing W W Norton Co, New York, 1934
- 16 Riggs, A F Play-Recreation in a Balanced Life Doubleday Doran and Co, New York, 1935
- 17 Shaw, C R and McKay, H D The Causes of Crime—Social Factors in Juvenile Delinquency U S. National Committee on Law Observance and Enforcement. Reports VI, 1931
- 18 Steiner, J F Americans at Play McGraw-Hill Book Co, New York, 1933
- 19 Women Workers and Labor Supply National Industrial Conference Board, Inc, New York, 1936

A PROGRAM OF PHYSICAL EDUCATION FOR MODERN AMERICA

"Now, when all human institutions so slowly and laboriously evolved are impugned, every consensus challenged, every creed flouted, as much as and perhaps even more than by the ancient Sophists, the call comes to us to explore, test, and, if necessary, reconstruct the very bases of conviction, for all open questions are new opportunities. Old beacon lights have shifted or gone out. Some of the issues we lately thought to be minor have taken on cosmic dimensions. We are all "up against" questions too big for us, so that there is everywhere a sense of insufficiency which is too deep to be fully deplored in the narrow field of consciousness. Hence, there is a realization that mankind must now reorient itself and take its bearings from the eternal stars and sail no longer into the unknown future by the dead reckonings of the past."—G. Stanley Hall

"Sport, which still keeps the flag of idealism flying, is perhaps the most saving grace in the world at the moment with its spirit of rules kept, and regard for the adversary whether the fight is going for or against, when, if ever, the fair play spirit of sport reigns over international affairs, the cat force which rules there now will sink away and human life emerge for the first time from the jungle."—Galsworthy

CHAPTER VIII

A Program of Physical Education for Modern America

A Blindness in Intellectuals—In a book entitled *A Program for Modern America*,¹ the author discusses child labor, unemployment insurance, health insurance, old age pensions, shorter work week, collective bargaining, public works, housing, agriculture, natural resources, taxation, banking, electric power, railroads, Constitutional reform, and civil liberties. There is not one word on education, music, art, dance, sport, play, recreation, or health. Instances could be multiplied in the literature and in practice which reflect a certain blindness in intellectuals, perhaps in human beings, with respect to certain areas of human experience. These persons are confident that business and the general field of political economy require careful study, analysis, and description. They are inclined to believe, however, that play will take care of itself, that sport, dance, and the out-of-doors will somehow be provided, if there are any persons who wish to concern themselves with these "frills."

Those blind in this matter ignore the implications of the economic, social, and political data of the last chapter; they are, at least to all appearances, unaware of the meaning of the facts concerning the hazards and shortages of modern life, and they are quite unable to see delinquency except in terms of housing or national vigor except in terms of health insurance.

The economic factors bulk so large in the problems of human society that they tend to push out of the picture other important influences. At all events, this book will not ignore physical education as it presents a program.

Outline of a Program of Physical Education.—Physical education is a form of education. It is life and living. Its activities are to be engaged in because of the satisfactions they offer to him who participates. To him who enters the lists of its activities there should come as by-products, health, skills, good postures, strength,

¹ Laidler, H. W. *A Program for Modern America*. Crowell, New York, 1936.

endurance, and the many results so frequently sought as direct ends and so rarely gained. Physical education is fundamentally an attitude, a way of living, a point of view, incidentally it is a technique, a performance, a particular skill. Given the former fundamentals the latter incidentals are acquired, without the former, the latter are only rarely secured or fall early into disuse.

The program of physical education should be outlined with reference to the problems to be met. The first five chapters have indicated some of the principles which should influence its organization. The tendency for old forms of gymnastics to persist in the schools and the continuing lack of adequate equipment in plant and teaching personnel are not to determine the character of the outline. In spite of this, it may be noted that the outline presented is now realizable in many schools and is within the reasonable hope of the great majority. If the outline of the program meets with approval and the body of ideas which lies back of it is sanctioned, then every one who so approves is obligated to secure the means to put the program into operation to the limit of his ability. That person is not a safe mentor who finds himself in agreement with a body of ideas, but explains his lack of outward support by the remark, "I don't believe they will work." If the natural program is the one which should be developed everywhere, then those who accept the dictates of its truths are obligated to put them into operation.

The several parts of physical education may be represented graphically in Fig. 13.

This outline of the program shows the activities and indicates some of the prominent outcomes that may be expected from such a program properly conducted, and indicates the organizations within which the activities may accomplish certain results. Further analysis of these activities in greater detail is essential.

Individual Gymnastics.—Many individuals have defects which are remediable by means of the therapy of exercise. This is the function of individual gymnastics. In this program corrective activities are prescribed for individual persons after an individual examination. The older name corrective gymnastics was unfortunate because it did not suggest the fact that these measures are individual. To give corrective exercises to a large group is like treating a group in the clinic with the same medicine. This is not

THE NATURAL PROGRAM OF PHYSICAL EDUCATION

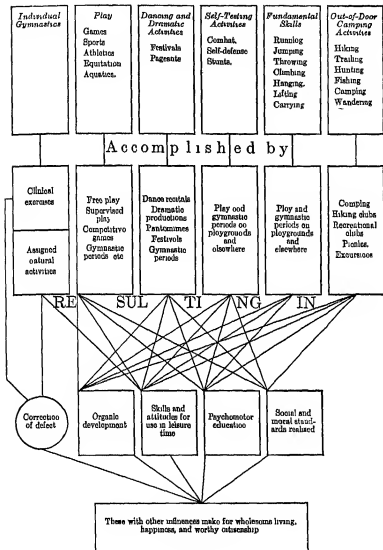


Fig 13.

only incorrect from the standpoint of kinesiology, and individual pathology, but in effect it is also charlatanistic because such procedure blinds school people to the real necessity of provision in a scientific way for the growth and the correction of developmental defects of children. If corrective exercises are to be used, a clinic should be established and the children in need of correction should practice their prescriptions under the eye of the expert in that field. In the college field some interesting work has been done in the correction of defects by assigning restricted exercise of a natural play type to all cases. The results show that as large a percentage of correction is secured by this means as is generally accomplished by the use of the traditional exercises. Moreover, as Scott² suggests there are additional benefits, because through such activities the individual is not deprived of a natural physical education, but on the other hand is distinctly improved along the lines of his physical education and his ability to have at command activities for use in leisure time.

Games, Sports, Athletics, Play, Equitation, Aquatics.—In this group are included all the forms of play. Several types have been named to indicate that the entire range of play is involved. Wherever possible these activities should be carried on out-of-doors, and to the extent that self-direction and self-control are achieved, without direct supervision. Just enough supervision should be given to prevent the play disintegrating into rough house, and losing the values which are to be achieved through this activity.

These activities for normal young persons are pursued because of the inner urge which arises out of the nature of boys and girls. For the former there will always be the stronger urge to engage in play and games, but the present judgment may have to be recast in the future as more and more girls are given an opportunity in youth to participate in sports. These activities are at the very root of organic development for those who are prepared to enter. For those who are physically under par there is need for careful supervision, avoiding overdoing, tenseness, and strain associated with competitive enterprises. As the physically weaker ones gain in power they should be led into games gradually. No child can be

² Scott, H. A. *Supervised Exercise Corrects Defects of University Men*, *The Nation's Health*, October 15, 1926, pp. 660-662.

considered educated unless he has acquired in childhood and youth familiarity and skill in a large number of games and sports which give satisfaction and lead to their pursuit in recreational ways out of school

The individual who is physically educated in natural forms has an ability to use the body in ways to prevent strain, there is in such physical education an element of safety education. Skilled in the judgment of moving objects such a person is less liable to accident.

Finally, it is in the laboratory of play and games that standards are learned. One may talk about good sportsmanship, fair play, loyalty, honesty, and kindred virtues, but the play field is the only place in the school that provides the situations where the individual is under pressure to meet the standards set up.

Dance.—The dance program should include folk, national, social, tap and modern dance. It has no place for aesthetic or classical dance, those forms which flourished in education when the ballet and the romantic dance of Isadora Duncan were supreme in the concert field. Aesthetic dance—a distorted step-sister of the ballet, was not even a creditable imitation, for it perpetuated only the insipidness and preserved none of the beauty of that great art. Romantic dance too suffered abuses in its educational idiom, classical dance. There was meaningless scampering about with balloon and scarf, vitiated flittings and floatings into the realm of “sweetness and light” with no thought of significant form or intelligible content. But in the hands of the sensitive expert it possessed beauty, sincerity and real worth as an educative tool. The exclusion of classical dance from the present program is made entirely on the basis of timeliness. It served admirably its age. Neither aesthetic nor classical dance possesses validity or integrity in the present decade of the twentieth century. By the inevitable process of evolution they have been supplanted by modern dance.

Dance in education should be an expression of a mood, feeling, emotion, or idea, and the outward forms should be determined by the content and arise out of the inner urges of the dancer rather than be determined beforehand by “aesthetic considerations.” This is *not* to say that dance is “self-expression,” that it is a purely subjective projection of the joys, griefs, hopes and fears of a single individual. It is rather the objective comment of that individual

personality upon the outward causes of those experiences, a comment upon the realities of life. To dance significantly one must really know life. This holds true for every type of dance worthy of inclusion in a progressive program of physical education.

There is relatively little controversy, as evidenced by current practice, concerning the educational fitness of folk, national, tap and some form of creative or modern dance. But social dance should also be taught by the school. Essentially a romantic form and of large social implications, it must be conducted to preserve the best standards of society. If the school does not elect to do this and says in effect that there will be no dancing in the high school, boys and girls will go elsewhere to dance. Instead of the dancing at the school where there could be wholesome influences at work to set desirable standards, there will be dancing at the public hall where the influences for wholesome standards are absent. Young people are not to be shut up in a box, as many adults are realizing today, but if they are not helped to appreciate and enjoy romantic things in a fine way, they will carry on their love-making in primitive fashion according to their instincts.

Self-testing Combat and Self-defense Activities—Many games are self-testing. Playing tag is testing the runners as well as the "it." But of more direct bearing is the meaning of this term upon those stunts that are directly ways of testing one's ability. In general, tumbling and stunts, on and off apparatus, are included here. The usual "apparatus work" will have to be modified if it is to be acceptable in this classification. Much of the artificial "form" bears no relation to the actual doing of the stunt at all and is merely a form of "window-dressing" comparable to much in military tactics.

The combat and defense activities for boys are boxing and wrestling, and for both boys and girls jiu-jitsu, hand wrestling, and similar stunts.

Fundamental Skills—It is a curious fact that one may observe many lessons in physical education without finding much intelligent instruction in the fundamental activities in which man engages every day. Games, stunts, and dance are frequently directed with little regard for the technic of the activities. The reason for this condition lies in the unwarranted notion that the chief purpose of the period of physical education is "to give exercise" or "to

promote health " Walking, running, climbing, throwing, hanging, jumping, leaping, carrying, comprise the fundamentals of all natural activities and their execution in proper form is important for the continuation of the activity of which they are a part. One likes to do what one does well and excellence in motor activity resides largely in proper performance of fundamental technic. Instead of working for "exercise," or "health" as immediate objectives of physical activity, the teacher should remember that with proper selection of the situation and skilled direction of the activity, these popular values will accrue. The chief purpose on the technical side is to secure quality of performance.

A scientific program and methods of physical education should be viewed as means in the education of children and older persons. Because the means are physical, "exercise" will result from the activities. To be physically educated, then, will mean, on the technical side, ability to walk, run, jump, climb, throw, and hang with control, ease, speed, and strength. Walking, climbing stairs, throwing, hanging, climbing ladders, jumping, leaping, carrying—these and others comprise a great mass of technic that must be learned correctly or humans will continue to handle their bodies as if they were sticks, wholly devoid of balance, poise, and control.

Fundamental skills applied correctly to the acts of daily life should improve efficiency and conserve power and energy. Picking up objects, reaching for objects on shelves, lifting and carrying suit-cases, making beds, raising windows, moving tables and chairs are a few of the common motor problems that men and women meet every day. There is a correct and an incorrect way to do these and other movements. Physical education should not assume that ability to do a folk dance will guarantee ease and control in carrying ashes from the basement or in raising a window in the bedroom. There must be specified training in the fundamental motor controls through identical or similar procedures and explanation of the principles involved.

Important points in the teaching of this phase of the program are illustrated by the five samples below:

- 1 In raising windows, stand close to the window and keep trunk straight.
- 2 In lifting heavy weights from the ground, bend knees, keep back erect, and throw effort on the large muscles of the legs.

3 In carrying objects in each hand, such as suit-cases, bend the arms slightly at the elbows

4 In moving oil cans, barrels, trunks, etc., keep close to the weight to be moved

5 In work in a sitting posture, where one must reach forward as in typewriting, keep the back straight and bend at the hip joints

Out-of-door Activities of the Camp.—Whether it is the automobile that is responsible for taking people to the country or not, the fact remains that more and more persons are learning anew the joys of out-of-doors. This is a most salutary thing and promises much for the coming generation. Every school should encourage the Boy Scout and Girl Scout programs and do everything possible to further and extend the work that these organizations are trying to do.

To hunt animals with the camera, or by trail marking, to carry on treasure hunts, to fish and cook out-of-doors, are some of the legitimate educational measures to be used in the education of boys and girls. Recreational clubs that meet on Saturday afternoons for hikes into the country, picnics and excursions, something of the idea exemplified in the "Wanderlust" Clubs developed by Mr. Stecher in the Philadelphia Schools—these are a legitimate part of the program of physical education.

What Part has Gymnastics in this Program?—Gymnastics has no responsible part at all if by gymnastics is meant the old formal exercises done to response-commands or in drill forms by imitation. There will always be a place for gymnastic practice of a natural kind because all of the preceding activities have a technic that must be learned in relation to the whole activity that goes on. The realization of a difficulty presents an opportunity for drill. Thus, practice in the difficulties arises out of doing the real thing.

Frequently mimetic exercises which imitate in a poor way natural activities are offered as a substitute for the more artificial exercises of German or Swedish origin. Such exercises are worth very little as training in the technic of the activity which they are supposed to represent, in some cases they do a great deal of harm. It should be perfectly clear that the place for drill arises when the individual or group has difficulty and when there is

conscious need for perfecting some part of the movement before the whole thing can go on as the participants would wish to have it go

If reliance for teaching of a program must be placed upon untrained teachers, then formal calisthenics will constitute a large part of the program. To conduct successfully a natural program requires intelligence, thorough training, and understanding of principles. Formal exercises which can be learned from a syllabus are about as useful as other things gained in such a way.

Clerks, business men and women, and other sedentary workers, who are frequently physically illiterate, employ setting-up exercises in their own homes or various programs of calisthenics, labeled by such alliterative catch-names as Daily Dozen. Such exercises are just valuable enough to mislead these unfortunates, and without an adequate appreciation of physical education they are unable to distinguish between the real and the counterfeit. In the adult world this view is illustrated by the organized instruction given by radio for certain types who lack the vision, will, or opportunity to carry on effectively the complete business of living. Relief exercises for children in school and radio exercises for adults at home are typical absurdities in an age which often forgets normal human needs, human possibilities in living a good life, and the place of joy and happiness in all of life.

The fact that those who pursue economic goals solely can continue their business on half-hour, tri-weekly periods of sweat-exercises in the gymnasium is no criterion for the whole of physical education. This should be well understood. Even less so will the physical needs of these persons serve as standards in time, type, or quality for the physical education of children.

The Place of Drill—The simple play and dramatic activities of the first four grades present adequate developmental and educational opportunity without many technical difficulties. But with the more complex activities as illustrated in the games of higher organization, and in modern dance, an increasing skill is required for the satisfactory performance of the activities. These activities are desirable because of the range of satisfactions offered and the repertoire of plays provided. They add to the richness of life and help in avoiding that narrowness that comes when one does not know how or what to play.

But in teaching groups and particularly large groups, facility is provided by being able to analyze the motor difficulty to the end of better performance, and working on that difficulty and in relation to the activity from which it arose. Thus, natural activities have technical problems in movement which require practice of the fundamental elements inherent in them. For example, in teaching basketball to novices one would present the activity as a game, in the course of which it would readily be observed by the players themselves that a certain faculty in the game was lacking, due to certain motor disabilities. This is the source and justification for drill in relation to basketball. In similar fashion practice in the technic of other activities grows out of the activities themselves. The essential condition of this situation demands that drill be presented only in relation to the activity which it represents. Therefore, the analyzed motor elements cannot be organized into a system of movements planned for and taught as exercise. They are not capable of reduction to "day's orders," or of use in syllabi except as illustration.

Finally, it should be noted that the real activity itself is always superior to the practice of its parts. Practice of the elements should never be made a substitute for the real thing. The drill in sprint starting can never equal the actual practice in that activity in its normal environment. Games, dance, stunts, camping, should comprise the core of the program, drill in parts is supplemental as a teaching method to facilitate the acquirement of the real activities themselves.

When Is a Person Physically Educated?—To be physically educated includes more than a proficiency in a variety of skills. The medium is physical activity, but the whole person is involved. Hence, it will include, also, interests and attitudes, appreciations, understandings, and knowledges. To be able to play a game well is important, but to have such an attitude toward life that sport has a place is equally so. To have some sportsmanlike attitudes about play, to know significant items in conditioning oneself for activity, and to recognize good play in others—these are imperative in a physically educated person. And rhythm belongs, and the out-of-doors, fishing and hunting—the vital touch with nature in her creative powers captures for modern man old responses that light new fires and give new strengths.

Moreover, the place of skill and satisfaction are never to be neglected. These are basic. The surest sign that one may possess an abiding interest in an activity is the possession of skill in it above the dub or novice class. There may well be criticism of efforts to develop champions and record breakers for these may yield limited social returns for the human energy and wealth expended, but there can never be a question of the social value of persons who have acquired levels of skill which help to make them interested in play, dance, and the world of the out-of-doors.

This concept of a physically educated person differs sharply with views that would make physical education a body-building, disciplinary, obedience-developing function in the schools. It maintains that we do not exercise muscles to strengthen them, but we educate individuals through motor activities which incidentally strengthen muscles. The focus is the individual in society, and not his muscles. It is obvious that technique will be learned and better learned in this approach, but the technique are only means and never ends.

Summary.—From the preceding discourse, the following would appear to be important.

1. A program for modern America must serve the whole man. Man does not live by bread alone.

2. The natural program of physical education relates to the immemorial, racial activities of man, and leads on to points of view, skills, and practices for the whole of life.

3. The effort to correct physical defect must not result in a restricted, poor, and unnecessarily self-conscious life.

4. Since the test of life is not mass but function, it follows that correction of defect must aim not at anatomical symmetry but at harmonious function.

5. Human beings have by nature urges to certain types of activity. Education starts with a tremendous force when it uses these fundamental impulses.

6. No child or youth can be considered educated unless he has acquired skills in motor activities and interest to engage in them.

7. Dance in its varied forms offers opportunity for education in standards of living, for appreciation of beauty, and for expression of beauty in many ways.

8. The more vigorous testing of the individual given by combat

and self-defense activities offers a school of training in self-control that is unequalled by any other agency in the school

9 Physical education must help to reduce physical illiteracy, through training in the alphabet of daily life activities

10 Physical education is not to be restricted to a gymnasium, its activities include, aside from certain special skills in the small muscles, the whole range of motor education. The out-of-doors should be used widely

11 The technic related to natural activities is analyzed for teaching purposes but it should not be separated from the activity out of which it arises, nor synthesized into a special "system" of practice

QUESTIONS

1 Why does preoccupation with the means of making a living prevent, so often, consideration of how to live?

2 Why do some people believe that play and recreation, fitness and motor skills should be ignored?

3 What are the six parts of the natural program?

4 How are they to be accomplished?

5 In what do they result immediately? Remotely?

6 Why should corrective gymnastics be individualized?

7 What leads children to engage in games?

8 What should be a standard of education for boys and girls?

9 What should the dance program include? Why must one know life in order to dance significantly? Is this true for other arts?

10 What is the function of the social dance in high school? Why?

11 What are self-testing and self-defense activities? Why are they valuable?

12 What are the fundamental skills?

13 Why are activities of the field, trail, and camp a part of the program of physical education?

14 What part has gymnastics in the program? What part drill?

15 When is a person physically educated?

REFERENCE READINGS

- 1 Blanchard, V. S. and Collins, L. A. *Modern Program of Physical Education*. A. S. Barnes and Co., New York, 1940.

- 2 Cassidy, R. *New Directions in Physical Education for the Adolescent Girl* A S Barnes and Co, New York, 1938
- 3 Counts, G S. *The Social Foundations of Education* Charles Scribner's Sons, New York, 1934
- 4 La Salle, D. *Physical Education for the Classroom Teacher* A S Barnes and Co, New York, 1937
- 5 Nixon, E W and Cozens, F W. *An Introduction to Physical Education* 2nd Ed W B Saunders Co, Philadelphia, 1941
- 6 Neilson, N P and Van Hagen, W. *Physical Education for Elementary Schools* A S Barnes and Co, New York, 1929
- 7 Scott, N G. *Analysis of Human Motion* F S Crofts and Co, New York, 1942
8. Sharman, J R. *Modern Principles of Physical Education* A S Barnes and Co, New York, 1937
- 9 Staley, S C. *The Curriculum in Sports* W B Saunders Co, Philadelphia, 1935.

AIM OF PHYSICAL EDUCATION

"The time appears to have come when education should recognize certain verities de M de la Palisse First and foremost of these is the obvious truth that education exists for the child and not the child for education, and, secondly, that though the subjects be many, the child is one, and that therefore whatever education is given to it, that education must be a whole in itself, or in other words, the subjects, arts, crafts, or accomplishments that are taught, whether they be physical geography or physical exercises, must no longer be taught in watertight compartments, but must take account of each other's presence in the curriculum, and, as far as possible, be linked up together into an organic whole"—Brereton

"Physical education is for the sake of mental and moral culture and not an end in itself It is to make the intellect, feelings, and will more vigorous, sane, supple, and resourceful"—G Stanley Hall

"Spinoza makes the pregnant remark that we do not know what Body is capable of We may go a step further, and, following Aristotle, declare that we shall never know, till Body finds its true function as instrument of fully developed Soul For materialism consists, not in frankest recognition of matter, but in the assignment to it of a spurious supremacy or independence There can be no materialism in utmost emphasis upon physical education so long as 'Body for the sake of Soul' is as it was with Plato, the presiding principle of educational action"—MacCunn

CHAPTER IX

Aim of Physical Education

General Considerations in Formulating an Aim of Physical Education—The formulation of a theory of physical education ought to grow out of a practice which is continually checked by principles. Theory and practice should be subjected to a constant correction, the one by the other, affording a reciprocal and necessary modification. The effort should always be made to provide actual activities to illustrate the principles presented and to find acceptable principles to justify the practice.

This is the test that the practical person should set himself in working with a program of physical education. There is no reason for pride in a position or a type of work which is maintained on any other basis. The person who can teach a program and still have a very little understanding of the legitimate objectives and no concern about the relation of the immediate professional interest to other programs and other human effort is making a questionable contribution to the work of the world. Such autotelic teaching makes the person a slave to a system or method, hence he loses the inspiration that comes from work that has meaning.

This relationship of theory to practice and of practice to theory illustrates what is meant by the frequent admonition of thinkers that one should keep an open mind. The one thing that should be remembered by physical educators is that no discussion of physical education represents a final statement. The most elaborate "system" of gymnastics is just the kind of method and material which is most susceptible to interpretation, modification, and, at times, complete rejection. It is always a vain thing to attempt to force the living into set molds. All the molds crack. They are too constricted and too rigid for what we try to put into them. The physical education of the human race cannot be resolved into a system or into a method for all time. At any one period, the best thought can be brought to bear upon the problems confronting the profession and the most practical solution offered. Succeeding generations will of necessity feel free to discard much that we have done, and to meet the problems of their day with new ideas,

different organizations, and more abundant opportunities. For the present, the chief business is to find truth, to build sanely and with justifications, there will be more then to salvage in the future.

Students of physical education should remember that the doctrines taught them in their professional school are not necessarily true. To too great an extent students have the foolish habit of accepting fully the dicta of professors without going through the process of really making the conclusions of the professor their own. Even those whose judgment we respect and concerning whose integrity we have no doubt are liable to error and frequently make mistakes. The essential problem before the student or teacher of physical education is to arrive at a point of view that he can live with, acquire an attitude that he can support and, if necessary, defend. Authorities or experts in one's own field may be quoted, but only believed to the point where there can be essential agreement with the position stated. In a field outside one's own, one selects and follows an expert implicitly, to do so in instances where one should exercise one's own judgment is to stultify one's self.

Aim and Its Relationships.—An aim indicates direction, point of view, or goal. It is general in nature. As Dewey suggests, an aim is not really conceived unless the means are visualized and organized for the end in view. Objectives, on the other hand, are precise, definite, and limited statements of steps in the procedure of realization of the aim. Between aim and objectives there arises the need for statement of purposes which are not general enough to be an aim and not precise enough to be objectives. These declarations may be called platforms, purposes, and similar terms, thus avoiding confusion in terminology.

An illustration of this practice is shown in the following report of a national committee of the American Association for Health, Physical Education and Recreation.

TEN CARDINAL POINTS IN THE PLATFORM OF THE AMERICAN ASSOCIATION FOR HEALTH, PHYSICAL EDUCATION AND RECREATION, A DEPARTMENT OF THE NATIONAL EDUCATION ASSOCIATION

An adequate education will include worthwhile experiences in health, physical education, and recreation. Not only the concept of unity of the organism but also the clear recognition of the inter-

relations between organism and environment require that this education, if it is to be adequate, must concern itself with facilities, program, and leadership This may be accomplished through the development of

1 A comprehensive health protection program of children, including an adequate health examination, control of communicable disease, and healthful school living in the entire curricular and extra-curricular life of the school, directed toward the educational goal of developing capacity for self-direction in health matters

2 Health instruction based upon scientific materials progressively arranged throughout the grades and upper schools, and directed toward personal accomplishment and social ideals Safety should be included in this instruction.

3 A physical education program for all pupils every day, using activities that are educationally sound as well as developmentally desirable, progressively graded, and adapted to meet individual and group needs

4 Opportunities for the development of skills and interests in recreational hobbies that may range the entire curriculum, but centering most often in music, literature and drama, fine, plastic, and industrial arts, physical education, and various club activities of the school

5 Adequate indoor and outdoor facilities and sufficient time in the curriculum for all parts of the program, properly prepared personnel, and organization of pupils to permit the development of good instructional programs

6 Procedures for the scientific classification, grading, and promotion of pupils in harmony with the best practice in general education

7 The organization and administration of health, physical education, and recreation in the schools as a single, executive department, utilizing community and school effort and resources in the establishment of common purposes and policies as to finance, use of facilities, and cooperative working relationships among the personnel involved, all directed toward and thoroughly integrated with the general purpose of education

8 The accreditation of health, physical education, and recreation activities in all schools and colleges for graduation and acceptance from high school for college entrance

9 Extension of the desirable and practical measures for the promotion of health, physical education and recreation among boys and girls in schools to all members of the community, as the broader implications of education are accepted, and as the ideas of play and recreation as aspects of the finest living gain recognition

10 Professionally educated and adequately accredited administrators, supervisors, teachers and specialists for all aspects of the health, physical education and recreation programs Personnel should be recognized as including school physicians, dentists, nurses, nutritionists, mental hygienists, and other special health workers, physical educators including athletic coaches, and recreation workers and teachers

An Aim of Physical Education — *Physical education should aim to provide skilled leadership and adequate facilities which will afford an opportunity for the individual or group to act in situations which are physically wholesome, mentally stimulating and satisfying, and socially sound*

These terms require definition This will be given by stating what is meant and also what is not covered by the term

By "physically wholesome" it is meant in general that situation that is good for a man as determined by scientific experiment or that can be inferred from available scientific knowledge, or that is shown clearly by experience This will mean control of the environment as regards sanitary matters, such as air, dust, cleanliness, communicable disease, etc Moreover, since the subject is physical education the activity must produce the physiological results of exercise. The evidence is clear that a considerable amount of physical education is soft, not nearly vigorous enough to secure a high development of organic systems Frequently insufficient time is devoted to the program In order to secure "physically wholesome" outcomes, adequate time is essential Often, however, significant time is frittered away in poorly selected activities It is always important that activity should have reference to the condition of the individual At times the most physically wholesome thing for the person is complete rest There exists considerable unwholesome physical education in the schools and colleges which arises out of insufficient diagnosis and lack of proper classification of boys and girls for activity

It is important to judge all activities by this criterion, "physically wholesome." In this connection mention is made of Marathon races, underwater swimming, and the boy's game of basketball played by girls, games in which one is active while other players stand around, and similar activities not "physically wholesome."

By "mentally stimulating and satisfying" reference is made to situations which provide necessity for thinking in relation to the activity, and which gives satisfaction as the end-result of the activity that has been going on. Clearly then one must seek to secure from the participants a state of satisfaction from proper impulses and reactions and dissatisfactions from improper ones. One of the main concerns is to provide opportunity for satisfaction of the fundamental racial impulses which serve a useful purpose today in society. The chasing and fleeing games and numerous self-testing activities afford opportunity of a desirable sort. It should be clear also that in the final analysis the situation that is mentally stimulating and satisfying will secure the intellectual control and sanction over the emotional ones. Society is so organized today that the person controlled by the emotions rather than by the intellect suffers greatly and is distinctly less efficient.

It is important to point out that mental gymnastics are of limited power to stimulate, and are likely, if continued past the period of novelty, to be distinctly dissatisfying. Response-command exercises fall in this category. To develop an approving attitude toward physical activity, to acquire a point of view which favors its continuance, are vital to the pupil so far as his physical education is concerned. Physical education is an activity which should be based on the nature of the individual, and be conducted to increase interest as well as skills. Graduates of high school frequently come to college seeking to be excused from physical education because of dissatisfying experience in physical education. Faulty aims and traditional teaching result at times in a positive dislike for an activity which is largely justified in education on the basis that it will be continued throughout life.

The problem in movement is always the individual pupil's or student's own problem, however. The realization that the individual has a problem, related as it is to an inner urge to solve it, opens the way for thought and favors thinking about it.

It is precisely at this point that we find the weakest link in all types of physical education, although the formal, traditional type fails utterly here. We need to remind ourselves continually of the need to give the child a situation where mental activity can go on. It is in this connection that Curtis¹ writes "The failure of conventional teaching lies in the fact that it does not recognize that true education results only when an individual purposes, plans, acts, judges, and generalizes for himself." Later he says "Consequently, after the children have once formed satisfactory purposes they must be made wholly responsible for the achievement of their purposes, the teacher abstracting himself from the situation and contenting himself with watching the struggles of the children to achieve their goals." Note he says "*their goals*." This entire article is well worth the careful study of every teacher.

By "socially sound" it is meant that physical education should make adequate provision for the appearance and development of moral and social values. This provision is secured largely through the teaching and directing staff in charge of the activities. These values are possessed by the teacher, and should have such meaning that one would be willing to work for them. In teaching social and moral values one has to deal with building proper attitudes and general appreciation, so that the response secured in relation to physical education will be thought of as typical of the kind of response which should always be made. Honesty in play is of some importance in itself, but its chief value lies in the opportunity given to the teacher to develop an attitude which will favor honesty as a quality desirable for one to express at all times.

Whatever the program of the school or the out-of-school life of the child, there are always concomitant learnings. These are not injected into the learning process, but are a part of it, and can never be dissociated. Now, while the school in general has been given the main responsibility for teaching standards, and developing this second result as well as the first, the part that physical education is to play is not always clear. If one follows the lead of those who advocate a back-to-the-body movement, the newer emphasis on concomitant learnings will have no clear obligation. The utter worthlessness of the back-to-the-body idea lies not alone in the meagerness of its outlook, but in the complete blindness to

¹ Curtis, S. A. *Detroit Journal of Education*, February, 1922.

the fact that no matter what you teach, games or weight lifting, there are always concomitant learnings. Physical education has objectives and means for attaining them which include more than physical efficiency and muscular power, important as these are. It is this recognition that has been an effective force back of the playground movement, the Boy Scouts, Girl Scouts, and similar organizations. Their programs, while primarily concerned with physical education activities, are receiving the support of communities because of the character-building discipline, the social and moral education, the concomitant learnings which are possible.

There are important difficulties to be surmounted in the realization of worth-while concomitant learnings in physical education. There will always be learnings, it should be remembered, but the kind of learnings which may be socially worth-while are difficult to achieve.

What is accepted as "socially sound" by one generation may be discarded by another. Over a long period of time there has been established a number of qualities which are generally accepted today, and, in all probability, will be continued as worthy because of the contribution they make to social control and human happiness. These qualities are truthfulness, honesty, fair dealing, the give-and-take spirit, loyalty, modesty, courtesy, submission to group opinion, self-restraint, self-discipline, gentleness, courage, generosity. Unless physical education results in socially useful conduct it has no right to the term education.

The Fallacy of the Back-to-the-Body Aim—The most significant fact in educational philosophy during the past twenty-five years is the broadening of the aim of physical education. Before 1915, the generally stated and widely accepted aim expressed concern solely about physical outcomes. The items of the aims were correction of posture, development of muscle, promotion of intestinal peristalsis, increase of perspiration, and similar purposes.

The growing sciences underlying physical education forced a new interpretation. The biological values—always of great importance—were not discarded but the other aspects of the total individual were now recognized also. This newer and total interpretation is widely accepted today and naturally a great change has occurred in the program itself.

In recent years there have been efforts to lead physical education back to a bone and muscle past. Responsible leaders have phrased this endeavor as a "back-to-the-body" movement. Scarcely a *movement*, as yet, its potentiality for injury to a great field is serious enough for us to inquire fully into the matter. Regardless of the zeal and energy of the proponents of this idea, three fields of learning will never allow physical education to go back to the body.

Physiology Will Not Allow It to Go Back—When physiology was a "science" of parts, it was acceptable to talk about muscular exercise in terms of effects on muscles alone, or circulation alone, or on any single function. In those days the hygiene of exercise was discussed solely in terms of perspiration and intestinal peristalsis and without any recognition of the emotions and mental hygiene.

Today, however, modern physiology presents the facts about endocrine secretions, the correlation of organic systems in indispensably related functions, and the balance of forces in complete integration of the organism. Indeed, if one should remark that physical education is going back to the body, a modern physiologist would be likely to ask, "Where is that?" He might observe that the hand is as much brain as body and that thinking is as surely physical as mental. All functions are the expression of the whole organism.

No, modern physiology will not allow physical education to go back to the body.

Psychology Will Not Allow It to Go Back—When psychology was a "science" of *mind*, it was customary for psychologists to discuss will, perception, memory, and other isolated categories of mental activity. In those days, it was usual for physical education to concern itself with *body* and psychology to concern itself with *mind*.

Today, there are many different schools of psychology—Thorndikian, Gestalt, Behavioristic, Objective, and others. In all of them, however, there is no place for the dualistic notion of *mind and body*, as separate and distinct entities. The individual is a receiving organism played upon by a variety of forces. He responds to these, he modifies them, or in turn is himself changed by them. Man, however, is a whole. If then a physical educator proposes to

deal with the body and sets out on a plan of weight-lifting or a similar restricted program in the expectation of avoiding the mental and social, a modern psychologist is likely to ask, "But what are you doing to interests, emotions, and habit patterns of the person?" If the answer is, "Well, I'm concerned with the body, someone else must look after the interests and emotions," the psychologist may quite properly observe, "You cannot do that. Every time you lift a weight you affect the whole man, not just a muscle."

No, modern psychology will not allow physical education to go back to the body.

Philosophy Will Not Allow It to Go Back—When philosophy concerned itself with a system of values apart from the conditions of life in which human action took place, it dealt, of necessity, with conduct as an abstraction. This was easy to do when mind and spirit were abstractions, separate and distinct from body.

Philosophy, however, changed its position as the evidences from psychology and physiology revealed the unity of the organism and the interplay between organism and environment. This latter relation is revealed in Jack's words when he writes, "You will never get a beautiful England until you get a beautiful people to live in it."

Philosophy is interested in the whole person. It recognizes, therefore, the importance of the physical aspects of the individual. Since there is appreciation of the importance of the biological in human affairs, the philosopher does not wish it to acquire a spurious supremacy. Therefore, he holds that cultivation of the body for the body's sake can never be justified. All strength and power developed which is not used to further mental and spiritual values are parasitic forces consuming the earth's bounty. Emphasis upon the social does not mean that we are to be satisfied with a pale and pallid ascetic. Vigorous physical life is not incompatible with generous impulses and human kindness, but it is very easy to forget and to think of strength and power as ends instead of considering them as means. There are numerous illustrations of instances when this confusion appears. The exclusive attention to biologic objectives is typical of the end-result in body culture which finds in its own symmetry, its own power, its own skill sufficient justification of the use of time, effort, and

money. It is not fair to assume that such one-sided culture necessarily results in unworthy social types, but it is a fair statement to say that we cannot take the risk of educating a stronger and more healthy individual without seriously attempting also to make him socially minded, fair and just in action, generous in behavior, kindly and humane in attitude. If the physical educator says, "Well, I'll look after the biological, you take care of the social," the modern philosopher will reply quietly but firmly, "You, too, don't see the forest."

No, modern philosophy will not allow physical education to go back to the body.

Summary—The following points summarize the discussion of this chapter.

1 An aim is essential for the teacher of physical education. It must be his aim—a chart by which he directs his course.

2 An aim is to be distinguished from objectives, standards, purposes, and platforms.

3 The aim presented in this chapter derives from the fact that the child or youth is a growing, developing organism with certain biological, mental, and social needs, from the fact that there is an increasingly great difficulty in meeting these needs in modern society without planning for leadership and facilities which provide opportunity, and from the fact that the individual is a total organism.

4 Modern physiology, psychology, and philosophy will not tolerate a narrow aim of physical education, devoted to biological values alone.

QUESTIONS

1 What general considerations should be taken into account when formulating an aim of physical education? Would you consider Brereton's view? Hall's aim? MacCunn's statement?

2 How would you distinguish between an aim and a platform?

3 What is an opportunity in physical education?

4 What is the meaning of the words, *physically wholesome*? Give five examples.

5 What does the phrase *mentally stimulating and satisfying* mean to you? Illustrate.

6 When is a program *socially sound*?

7 At the present point in your study, is it reasonable to infer that biological values are ignored when proper attention is directed to the social?

8 Is either one to be considered more important than the other? Does your answer mean that one may not be important?

9 When attention is called to the direction you are walking, does that imply that you can now ignore good form in walking, or speed in walking, or other physical elements?

10 What is the back-to-the-body idea?

11 Why will it fail?

12 For what persons and programs may it be a proper corrective?

REFERENCE READINGS

1 La Porte, W R Administration of Physical Education in Secondary Schools University of Southern California Press, Los Angeles, 1935

2 McCloy, C H How About Some Muscles? *Journal of Health and Physical Education*, May, 1936, p 393

3 McCloy, C H Forgotten Objectives *Journal of Health and Physical Education* October, 1937

4 Nash, J B The Administration of Physical Education A S Barnes and Co, New York, 1932

OBJECTIVES IN PHYSICAL EDUCATION

"Men shoot and throw. At first this is done as an 'instinctive' or natural reaction to some situation. The result, when it is observed, gives a new meaning to the activity. Henceforth men in throwing and shooting think of it in terms of its outcome, they act intelligently or have an end (objective). Linking the activity in its acquired meaning, they not only 'take aim' when they throw, instead of throwing at random, but they find or make targets at which to aim. This is the origin and nature of 'goals' of action. They are ways of defining and deepening the meaning of activity. Having an end or aim is thus a characteristic of *present* activity. It is the means by which an activity becomes adapted when otherwise it would be blind and disorderly, and by which it gets meaning when otherwise it would be mechanical. In a strict sense an end-in-view is a means in present action, present action is not a means to a remote end. Men do not shoot because targets exist, but they set up targets in order that throwing and shooting may be more effective and significant."—Dewey

CHAPTER X

Objectives in Physical Education

General Considerations—The term, "objective," is used by the author to mean a precise, exact, and realizable end, and hence is not synonymous with aim. Popularized during the First World War, and indicating a certain geographical position or tactical maneuver, it will help to clear the confusion caused by the more general term aim, and in practice should lead to a definite distinction between the two terms. In military terms, an aim may be to win the war, an objective to win a particular battle, to repulse an enemy assault, or to sink a particular ship. In educational terms, an aim may be to develop the human personality, an objective, to have a child criticize his own performance, to gain five pounds, or to walk with his toes pointing forward.

Aim is used, then, to denote the direction, general purpose, objective marks out the specific points along the way, all of which contribute to the realization of the aim. The moment an aim is achieved it becomes an objective in the action that goes on. Another and more remote aim appears to chart the continuing course. In this sense then, the aim is never realized, and only the objectives are within the bounds of practical accomplishment. In Browning's lines,

"Ah, but a man's reach should exceed his grasp,
Or what's a Heaven for?"

there is suggested this ideal character of aim. On the contrary, an objective is of the most practical sort. In fact, only as it can be realized and recognized as an accomplished fact, perhaps measured, is it a legitimate objective.

This distinction between aim and objective partakes somewhat of the quality associated with any philosophical discussion of ends. The realization of an end only prepares the way for a take-off in the accomplishment of other and more distant ends. In similar vein an objective represents one step along the way to fulfilment of the aim.

The objective, then, is concrete. One should be able to tell when it has been reached, but this measurable quality does not exclude statements of objectives that for the present cannot be measured. Some of the objectives to be presently set forth are of this tentative character. Nevertheless their indeterminate nature is due not to the quality of the objective, but more frequently to the lack of means of measurement. This feature will be cleared up as soon as the necessary research work is done. This discussion of the objectives of physical education will be arranged in the order of the activities presented in the outline of the natural program.

Objectives of Individual Gymnastics—In this group are preventive and corrective objectives.

Preventive—Through proper use of the motor mechanism, adequate nutrition, strong muscles and wearing of correct clothing and shoes, some postural defects can be prevented. Mental hygiene and normal interests will prevent others. The tendency to assign a single factor as a cause is, except in cases of specific disease, a mistake. For example strong muscles are regarded by experts as insurance against postural defect, but in some studies there is no relationship between muscular strength and good postures. Defects resulting from disease, such as anterior poliomyelitis, tuberculosis of the spine, and rickets, may be prevented in some but not in all cases.

In the problem of good postures,¹ the objective involves a concept of body relationships in terms of readiness to act. By good postures is meant *an adjustment of body parts to each other which results in an erect, alert whole, representing readiness for mental or physical effort*. This broadening of the concept "posture" to include mental as well as physical characteristics implies the following: (1) selection and wearing of clothing which favors readiness, (2) facial expression, indicative of an emotional control which favors readiness, and (3) objective rather than a subjective manner, as favorable to readiness.

The emphasis on the psychological in relation to postures is in line with the experience of teachers of individual gymnastics, and also conforms to experimental evidence from neurology.

¹ The term *postures* is used to indicate that there are many good postures, not one. The term *posturing* might be better since what we seek is a dynamic adjustment, not a structural goal.

Corrective—In this phase of the objective for individual gymnastics we are concerned with complete correction or maximum amelioration of the defect. The procedure for this objective is well stated by many specialists in this field

In the discussion of principles Miss Todd² stresses the importance of three factors 1, balance of weight of pelvis, thorax, and skull, 2, position of shoulders and sternum, and 3, position of the fifth lumbar vertebra

Physical education must study anew the human motor mechanism with reference to body control, strains, and expenditure of energy. It is a mistake to regard parts of the body as isolated and unrelated mechanisms Integration of the entire mechanism as a mechanical instrument is just as important for success in correction of defect or education in use, as integration with reference to physical, mental, and social aspects of life

Much of the so-called corrective work is not acceptable because of the attempt to correct individual defects in class work of a large group, the neglect of important elements in personality, and the failure to recognize the need for integration of the entire individual.

Objectives in Games, Athletics, Sports, Aquatics, and Equestrian.—In this group, generally, it is to be desired that skill in and love for an activity be established to the end that the activity will go on The goal here is continuation of the activity To secure this there must be acquired sufficient skill which will rank the individual above the novice class for his stage of development, and sufficient love for the activity to afford an incentive to participate even when the conditions are not favorable The close relation between love for play and skill in play establishes the justification for reasonable perfection in the activity

The precise games, athletics, sports, or aquatics one should be skilled in, and the exact degree of skill to be required, cannot be stated. Nor is it known, in all instances, what particular modifications are necessary for age and sex differences How many games should one know? How well should one be able to play? These are questions which need extensive study Of the many activities in this group two seem to have secured a well-defined status: equestrian and swimming

² Todd, M. E. *The Thinking Body*, Harper & Brothers, New York, 1937.

For the former, it would seem reasonable to propose that for certain persons who have an opportunity to ride horses the following obtain

1 Ability to ride a "broken" horse with pleasure and profit to the rider and without harm to the horse The number of gaits to be mastered is a matter of individual preference

2 Ability to care for a horse, to feed, water, and bed-down a horse

3 Ability to enjoy the out-of-doors rather than the sawdust ring

For swimming, there are a number of objectives set by departments of physical education These vary greatly, but most departments agree in requiring some specific proficiency The following are commonly held objectives

1 Ability to swim any stroke the length of the pool (60 feet) and to execute a plain front dive

2 Ability to keep up in the water for a period of three (3) minutes

3 Ability to swim, to float, and to turn from a front to a back position in the water and vice versa.

4 Ability to swim different distances Obviously every soldier and sailor should be able to swim

Swimming lends itself to precise statement of objectives, and objectives may be used to stimulate performance in the activity

Objectives of Dance.—Dance in its various forms has become a recognized part of physical education during the past thirty years But only for the last five years have many persons stopped to ask the reason for its increasingly wide acceptance and the magnitude of the place it fills in our educational program Before that we heard that dance was good exercise—but so were Swedish gymnastics, or that dance was pretty and graceful—but so was "Hearts and Flowers," rendered gracefully as a parlor accomplishment Neither of these reasons is sufficient to justify the place dance occupies today in physical education

During the past fertile ten-year period definite objectives have been formulated which serve as a basis for the selection of the types of dance activities which are best suited to the desired ends

Dance activity is a broad term which should include folk, national, tap, social, modern dance and their basic techniques as well

as the singing and dramatic games, the pantomimic rhythms of the kindergarten and primary grades. No one type of dance is adequate to meet the varying needs of individuals, old and young, tall and squat, literal and imaginative.

Modern physical education is concerned with the development of the whole individual. Dance from time immemorial has been an expression of the most fundamental impulses of mankind, his desires and aspirations, his needs and hungers. Until recently, the veneer of civilization has blocked any dance expression that could possibly satisfy the whole child or the whole man. Modern dance, vital, controversial and dynamic has gradually evolved to resolve this difficulty, to satisfy the whole thinking, feeling and acting person. To project meanings through rhythmic movement is a challenge which can be met only by the whole personality.

Any well-ordered program will include relaxation, and co-ordination which involves considerable tension or contraction. So far as dance is concerned, the power to relax consciously is valuable only as a foundation upon which to build movements of varying degrees of tension. It is important that a student should acquire those motor skills which are essential to a satisfying performance of all types of dance. This will necessarily include locomotor movements—walking, running, leaping, hopping, skipping, sliding, galloping, and combinations of these—the polka, waltz, mazurka and schottische. This will also include a broad experience in nonlocomotor or axial movement, swinging, sustained, sharply accented—or percussive movement. If no one type of movement is overemphasized a wide movement vocabulary will be gained and harmful muscle patterns will not be set.

With the majority of people the legs only are used in walking, with perhaps a swing of the forearm. Women, especially those past their first youth, are apt to walk with little action in the upper leg or thigh. If the hips are used at all, it is usually with a tilting motion from side to side. The back is held rigid, or is carried as a load, not as a part of the mechanism, the foot is used as though made of one solid bone. In such a walk the accent is down and the result is heavy and unlovely.

When the body is rhythmically co-ordinated the spine is flexible, the leg swings from the hip, knees slightly bent with a push off from the toe of the rear foot. With each step there is a slight

forward-upward tilt of the pelvis. The arms swing slightly from the shoulder, not the *elbow*. There is an effect of "upness" that reacts on the spirit and the whole walk gains in resilience and efficiency.

In addition to the objectives in motor technics, there are specific ends in adjustment of the individual to the group. A sense of belonging to a working group is valuable to every personality. It comes from planning and working together for a common purpose, a goal that is recognized and accepted as valuable and desirable. The necessity for adapting one's own movement to synchronize with that of others and of conforming to a particular design carries with it a strong feeling of responsibility to the group.

The achievement of this objective necessarily leads to the acquisition of poise. A person who is absorbed in rhythmically co-ordinated movement necessarily loses self-consciousness. Self-consciousness is a form of fear—a fear that the individual may not convey to the group the impression his mind thinks he should make, a fear that his inadequacy of expression may make him ridiculous in the eyes of others. This self-consciousness is inhibitory, and consequently destructive. Much of the lack of poise in persons is due to lack of skill. In young children fears and self-consciousness in various situations have been lessened by an increase of motor skill. Where there is a skill, suggests Jersild, there is a way.

To remove self-consciousness it is frequently necessary only to change the attitude of an individual toward his own performance. There are many who believe that only those who are "graceful" should dance. These should be brought to realize that it is for the value of the experience itself and not for the polished perfection of the results that dance is worth while in the physical education program. As Walter Pater remarked, "It is experience we want, not the fruits of experience."

When movement is regarded from an aesthetic point of view, the unique and distinctive elements in dance are considered. These include beauty of line, scope of movement possible for the human body, and consciousness of power in the control of a responsive body.

Appreciation of music—to recognize and respond to those ele-

ments in music which are basic to good dance composition considers dynamics, expressive quality, form or design and rhythmic elements, such as primary rhythm or meter, secondary rhythm or note-pattern, phrasing, tempo, and syncopation

Ability to make one's own rhythm, not merely to respond to the accurate accompaniment of a good accompanist, is an important objective

Appreciation of good design in movement will consider floor pattern and body contour

There are important by-products of dance The power to relax carries with it the means of improving postures The appreciation of beauty in movement is a strong motivation for good postures A dance which calls for extension and elevation of the whole body is far more stimulating than the catch phrases "stand tall" and "stretch up " The latter is purely physical in its application, while the former carries an emotional appeal which is undeniably more effective The technic of modern dance aims to develop an expressive body, flexible and well co-ordinated In detail, such a body will exhibit a flexible spine with normal dorsal and lumbar curves, strong flexible feet, well-developed waist muscles, a strong contracted abdominal wall, a head carried high, but without tension in neck, shoulders, and chest These points sought in the name of artistic expression bring with them the beauty of ideal postures and bearing

Another by-product of dance is an increased appreciation of the other arts, music, painting, sculpture, stage and costume design This does not come about as the result of direct teaching but from comments made by the skillful teacher upon the associated arts as they relate to any dance project

In general, the objectives pertaining to neuromuscular skills and organic stimulation have been emphasized to a much greater degree than the aesthetic objectives All objectives should be constantly in the mind of the teacher The student, on the other hand, should want to participate because it is interesting to build dances, just as it is interesting to write poems, tunes or paint pictures because it is fun to move well and expressively, to skip, to jump, to sway and to run

Dance is the art side of physical education In folk dance, the social element, and in tap dance the rhythmic and play elements

predominate, but in modern dance it is clearly recognized that artistic execution by the individual and the group is the ultimate goal

Objectives in Hiking, Camping, Fishing, and Hunting—The objectives in hiking, camping, fishing, and hunting have distinct national value in preparation for modern warfare. They are equally valuable for normal social life. The proposed objectives given below are tentative.

1 Hiking

- (a) Ability in adult to hike 15 to 20 miles a day with pack (one rest in every seven days, U S Army standard) without undue fatigue. This should be scaled for different ages, also stated without pack.

2 Camping

- (a) Ability to build a fire
- (b) Ability to build a bough bed
- (c) Ability to swing an axe and cut wood
- (d) Ability to cook food in vessels by boiling, in pans by frying, in pans by baking or roasting, and on a stick
- (e) Ability to make a blanket roll
- (f) Ability to pitch a lean-to or tent, etc
- (g) Ability to tie rope knots

3 Fishing

- (a) Ability to bait a hook correctly
- (b) Ability to cast a fly correctly
- (c) Ability to clean and prepare fish for cooking

4 Hunting

- (a) Ability to recognize animal signs, such as tracks, marks on trees, etc
- (b) Ability to follow animals, based upon a knowledge of their characteristic ways of acting

Objectives in Self-testing Activities. Stunts on Apparatus and Personal Combat Activities.—The objectives of self-testing activities need to be determined in many areas and more exactly than at present. Should all boys be able to chin themselves? How many times? Should all boys learn the handspring, cartwheel, forward and backward rolls, handstand, and snap-up? Which ones should girls learn? The objectives in stunts may have wide application. For example, how high should one be able to vault? Is rope climb-

ing an essential skill? What utilities have these in war? The objectives in personal combat seem to be well accepted

- 1 Acquiring skill and ability likely to be of value in everyday life
- 2 Development of athletic skills in terms of some obstacle
- 3 Ability to handle the body through increase of physical efficiency by development of neuromuscular skills in relation to some object to be surmounted by the body as a whole
- 4 Afford opportunity to increase self-assurance and courage in face of physical danger To make possible such work in artificial surroundings and with artificial equipment The woods and fields offer the ideal situation to be used as much as possible
- 5 Ability to attack and defend with many and varied means, for the defeating of an opponent or for defending one's self This is valuable in society for all young males

In seeking the objectives of this group, it is important not to lose the essential purpose through devotion to traditional forms Thus, in stunts on apparatus, it is desirable to consider the apparatus as an obstacle to mount or to get over easily, or as soon as possible, and to avoid forms which constrict the chest, make breathing difficult, and postures stooped

Objectives in Fundamental Skills.—These skills comprise in related and associated forms, or in direct copy, all of the technic of the four preceding groups They are the groundwork out of which drill arises For all time they will demand the attention of man, and must therefore give a conspicuous part in the education of the child Their performance requires the application of certain principles that must guide in the teaching of their form

There are dangers in their use (1) The attempt to systematize the activities and offer drill in technic in place of the real experience, and (2) the distortion of the true form through the necessity of adaptation to class use This should never be permitted, *e g*, sprint start

In the past the practice of calisthenics, apparatus exercises, or other forms of gymnastics, so far as these have shaped the body of physical education, has been based upon mechanical principles Thus, the Swedish system of gymnastics is constructed entirely on the basis of mechanical levers, weights, and power From this starting point a large variety of possible movements is selected

It is contended here that this method is wrong, because it considers man only as an anatomic fact, and not as a representative of the race in evolution. The differences in the two views is stupendous. The former knows muscular attachments, articulations, the latter views the evolution of animal life, and seeks to secure data and knowledge regarding the past of man, the forces at work producing man, the reason for man's present bodily organization, and the possible future developments of the human organism. It is held that for the purpose of achieving for man the best and most favorable condition for function and for life, it is necessary to approximate in man's exercises the forms of movement similar both in type and in quality and quantity to racial movements. Activities that are similar to the movements that helped to fashion the physical body of man are demanded.

In the first place, it should be noted that we have no principles or bases for selection to determine what movements are natural and phylogenetic. Studies of primitive peoples and the racial activities of civilized man, however, suggest three tentative principles.

Opposition in movement is seen everywhere, with few exceptions. A first-grade child, when asked to climb a ladder, will, if not instructed differently, show opposition in arm and leg movements.

Pictures showing primitive and savage peoples in action always illustrate this principle, so that we can say that many natural, untrained, and spontaneous movements show opposition. It is impossible, at the present time, to say that all do, it is likely that a very large percentage will be found.

Opposition may be defined as a natural selection by man of a method in movement of arms, legs, and trunk, caused by the nature of man's environment, by the character of his body structure, and by the success attendant upon the selection made. The selection made provides the use of opposite parts of the body in the synthesis of a movement. In the crouch start, right-handed runners invariably place the left foot forward, and left-handed ones the right foot.

In all throwing, climbing, walking, and running movements, where the feet and arms are used in succession, the opposition is between arms and legs on opposite sides of the body.

Right-handed boys show on anthropometric examination a

larger left leg than right. This fact supports the coaching view that jumpers who are right-handed should take off always from the left foot. (This corroborating testimony to opposition justifies the method, although its reason is referable to the brain rather than to the skeletal structure of the body.)

There are several athletic events which fail to show opposition, and, in one instance, or two possibly, evince nonopposition. These are, in the main, position movements, and do not require moving the body over the ground or over an obstacle. These forms are exceptions, in order to achieve some value peculiar to the movement. For example:

- 1 Fencing—This necessitates the turning of the side of the body, in order to present only as small a front as possible to the opponent.
- 2 Shot-put—This violates the fact of opposition in the preparation. It fulfils it in the put in the simple forms. The modern complex form, with the turn, does not conform in the put.
- 3 Shooting an arrow—The bow and arrow as an instrument necessitates a nonopposition position.

It is interesting that fencing as an activity is not very popular today. It has gradually lost its place among sports. This may be due in part to the decadence of the feudal spirit, but it may also be due to the fact that as an activity it violates a natural principle, and hence it fails to give organic satisfaction.

The shot-put, it might be noticed, is the one event in track athletics that is not very popular. It secures the interest in a very imperfect way, and is not especially worth while as an event. It keeps its place in intercollegiate athletics largely because of tradition.

In archery, a very popular sport, it might be declared that the opposition is between the two arms, and not between arms and legs.

There are other matters to be considered in this discussion. When the body is supported in the water, the principles may be present in some strokes and absent in others. A study of the various forms should be made with this declaration in mind.

Now if this is a true principle, and if it can be applied to all forms of physical education, what will it mean for gymnastic practice?

- 1 It will eliminate all movements that in action show non-opposition, and will select those having opposition
- 2 It will require that all climbing, vaulting, hanging, and other obstacle practice consider opposition in determination of form

In athletics it will continually emphasize opposition, and in "form" events it will determine good form to be that form which is natural, *i. e.*, the form which would be used if speed, skill, and endurance were the elements tested. Thus, hurdling for form will not be judged by aesthetic considerations, but practical ones.

In dance, it will dominate movement, as movement is considered for the purpose of expression of mood or idea, and it will be most useful here, because it is not the studied technic, totally unrelated to the movement.

Energy-activity Ratio—The second principle we may call the energy-activity ratio. It may be defined as that correlation of parts of the body for the purpose of securing the result sought with the least expenditure of energy, and with the most favorable adjustment of the body at all times. This is motor efficiency in precisely the same terms used by the engineer in speaking of efficiency. In particular, it recognizes that balance and control mean economical use of force, selecting appropriate muscle groups and inhibiting antagonists. With this principle in mind, contrast the scientific work of Sherrington³ and the absurdities of Swoboda with his resistive exercises.

This principle rules out movements that are used because they make balancing difficult *per se*, or the co-ordination difficult, or to satisfy some aesthetic form without natural sanction. This would mean that no movement that is untrue and insincere can be natural, and especially that all movements making for inefficiency and waste of energy are false.

For example, there are numerous instances of practices in the gymnasium which violate this principle of energy-activity ratio. When understood, their occurrence will be less frequent. Examples are 1 Relay race with basketball, and passing the ball behind the back while running, 2 relay race with basketball, and passing the ball between the legs while running, 3 numerous

³ Sherrington, C. S. *The Integrative Action of the Nervous System*, Yale University Press, 1906.

formal gymnastic movements, such as deep knee bending, trunk forward bending with straight knees, fundamental gymnastic position, and hips firm with wrists extended

Instances of movements in which the proper correlation of parts illustrates a proper energy-activity ratio are walking, running, throwing, and striking with a bat

There are many others The test to be made of the movement is in terms of the result sought Does the movement make an efficient and economical use of the motor mechanism?

Qualitative Adjustment—The two previous principles dealt mainly with the form of the movement, the last will be concerned largely with quality of the movement Speed, strength, and endurance are qualities added to movements after the movements are learned, and in accordance with the ability and characteristics of the individual The purpose is to secure better performance, as that is illustrated in the overcoming of an opponent, overcoming a record, or increasing the skill and motor efficiency

The objectives of particular fundamental skills may be stated as follows

Walking Specifically in walking the objectives are

- (a) Ability to move with the feet parallel, the weight on the outer side, the heel striking first, and pushing the body with the rear foot so that the weight is transferred from heel to ball of foot This illustrates opposition and the energy-activity ratio
- (b) Ability to swing the arms alternately with the legs
- (c) Ability to walk at a rate of four miles per hour (adult) We need standards for individuals of different ages
- (d) Ability to walk two miles a day without undue fatigue, and on extraordinary occasions to walk 15 to 20 miles (Standard of the U S Army sets 15 to 20 miles every day with one day rest in seven)

Running Specifically in running the objectives are

- (a) Ability to run in recognized good form To determine good form apply the principle of opposition and the energy-activity ratio
- (b) Ability to run certain distances without undue fatigue These are not determined yet, but there is great need for them

- (c) Ability to run certain distances in certain time These are not determined.
- (d) Shall the scout pace be an objective for boys and girls between twelve and sixteen years? For what distances?
Various performance standards in different events have been proposed Books on practical conduct of athletics give many types of standards

Jumping.

- (a) Ability to propel the body into the air Distance not fully determined One phase may be represented in Sargent's physical test of man Another is represented by standard performances in jumping
- (b) Ability to land easily and to fall forward toward the hands Contrast this form with the usual gymnastic jump and landing

Leaping

- (a) Ability to propel the body into the air and over the ground, taking off from one foot and landing on the other with continued motion
- (b) Distances are not yet determined fully Various standards have been proposed

Throwing Specifically to use opposition and energy-activity ratio

- (a) Ability to use opposition and energy-activity ratio
- (b) Ability to throw with accuracy
Various standards have been proposed in tests and rating schemes
- (c) Ability to throw certain distances
Various standards have been proposed in group and individual records

Hanging Specifically in hanging the objectives are

- (a) Ability to support oneself by the arms in a hanging position
Age and sex differences are not clearly established.
- (b) Ability to hang strongly so as to mount an obstacle Age and sex differences are not clearly established

Climbing Specifically in climbing the objectives are

- (a) Ability to climb a ladder How high or how fast is not determined
- (b) Ability to climb a rope or pole This is included in numerous "physical efficiency" tests

- (c) Ability to climb a tree, a fence, a wall How high an obstacle and age-sex differences are not clearly established
- (d) Ability to climb stairs without undue fatigue This needs more specific statement in terms of one's weight.

Lifting Specifically in lifting the objectives are

- (a) Ability to lift an object lighter than one's weight, with the back straight and lifting with the legs This may be illustrated with window, table, chair, or other common object.
- (b) Ability to lift a weight $\frac{1}{2}$, $\frac{3}{4}$, 1 times one's weight. The exact relation here is not known
- (c) Ability to pick up objects with proper attention to energy-activity ratio

Carrying Specifically in carrying the objectives are

- (a) Ability to carry one's own weight in balance and control
- (b) Ability to carry $\frac{1}{2}$, $\frac{3}{4}$, 1 times one's weight How far, and age-sex differences are not known
- (c) Ability to carry 30, 40, 50, 60 pounds for a distance of 5, 10, 15, 20 miles The precise weights and distances have not been determined

Summary.—The following paragraphs summarize the main points of this chapter.

1 An objective is specific, concrete, and realizable

2 Postures or posturing is a dynamic state which reflects an adjustment of body parts to each other which results in an erect whole, representing readiness for mental or physical effort

3 Factors which may prevent undesirable postures are adequate nutrition, proper clothes, wholesome mental and emotional states, strength of muscle, and knowledge of how to use the motor mechanism

4 Objectives in games and sports seek to develop skill to the point which will insure continuation of the activity.

5 The dance as an art has its own special objectives

6 Hiking, camping, fishing, and hunting are of distinct national value

7 The objectives of stunts, apparatus, and combat activities appeal to boys although there are limited activities in this group for girls All the objectives have wide application in war time The standards of commando troops may affect these objectives

8 Opposition is a principle of movement widely illustrated in many forms of activity

9 Application of the principle of energy-activity ratio will help in the selection and teaching activities

10 The objectives of fundamental skills are definite and can be sought by the teacher

QUESTIONS

1 What are goals? Why do men set up targets?

2 How do you distinguish between an aim and an objective?

3 What are the characteristics of an objective?

4 Why is it erroneous to assign always a single cause as the explanation of faulty postures? Explain fully

5 How do you define good posturing?

6 Why is a verb better than a noun to denote bodily adjustment?

7 Why is it undesirable to attempt to correct postural defects in class work? What is possible in this area in class work?

8 Why should we seek to have activities learned continued?

9 What is the relation between liking for an activity and skill in an activity?

10 What objectives would you select for equitation?

11 What objectives would you select for swimming? Does the present war strengthen your view? Why?

12 What are the important motor objectives of dance?

13 Why should dance seek to correct self-consciousness?

14 What relation exists between lack of skill and fears?

15 What is the meaning of Walter Pater's aphorism?

16 What are important aesthetic considerations in dance? Why is modern dance interested in art and music?

17 What are important by-products of dance?

18 How do the objectives of hiking, camping, fishing, and hunting serve in war time? What are their values in peace?

19 What objectives of self-testing activities can you make more specific? Justify your suggestion

20 What is opposition? Give several illustrations

21 Define energy-activity ratio. How can this be used in selecting exercises?

22. What is qualitative adjustment?

23. What is good form in walking?
24. How would you determine throwing standards?
25. What does it mean "to hang strongly"?

REFERENCE READINGS

1. Armbruster, D. A. Competitive Swimming and Diving. The C. V. Mosby Co., St. Louis, 1942.
2. Cottrell, B. and D. The Teaching of Stunts and Tumbling. A. S. Barnes and Co., New York, 1936.
3. Cureton, T. K. How to Teach Swimming and Diving. Association Press, New York, 1934.
4. Duggan, A. S. Tap Dances. A. S. Barnes and Co., New York, 1932.
5. Kiphuth, R. J. H. Swimming. A. S. Barnes and Co., New York, 1942.
6. La Salle, D. Rhythms and Dances for Elementary Schools. A. S. Barnes and Co., New York, 1931.
7. La Salle, D. Play Activities for Elementary Schools. A. S. Barnes and Co., New York, 1932.
8. Mann, M. and Fries, C. C. Swimming Fundamentals. Prentice-Hall, Inc., New York, 1940.
9. Mason, B. S. and Mitchell, E. D. Social Games for Recreation. A. S. Barnes and Co., New York, 1935.
10. Mitchell, E. D. Intramural Sports. A. S. Barnes and Co., New York, 1939.
11. Rathbone, J. L. Corrective Physical Education. W. B. Saunders Co., Philadelphia, 1934.

OBJECTIVES IN EQUIPMENT AND STAFF

"The rest was question of gear, of running machinery; of economy; and involved no disputed principle. Once admitted that the machine must be efficient, society might dispute in what social interest it should be run, but in any case it must work concentration."—Henry Adams.

"Beginning, three-quarters of a century ago, with bells that were dumb except when dropped on the floor, with clubs no Indian ever touched, with ladders that lead nowhere, with 'horses' that never walked and 'bucks' which were perfectly passive, we have rediscovered and adopted apparatus which is ages older, for we now introduce the student to the use of the fishing rod and the long bow, they learn to ride real horses and they are often not only permitted, but constrained to paddle in the old swimming hole which has been enshrined and glorified as the beautiful tiled pool of our college playhouses. This means that there has been a change of purpose in physical education and that mental satisfaction and recreation of both mind and body now have a large place in its aims."—James Frederick Rogers

CHAPTER XI

Objectives in Equipment and Staff

Relation of Facilities and Staff to Principles and Program.—Principles and program should take into consideration facilities and staff. Although this relation is not the primary one—the nature and needs of children, and the social needs of society are of prime importance—nevertheless the practice of principles and the extension of rational programs are conditioned by facilities and by staff, and these two items bear a collateral responsibility. It is noteworthy that physical education in the past has proceeded under great handicaps in these respects. Meagerness of physical plant and numerical and professional limitation of staffs have always been serious problems. For this reason also it is important to set forth the objectives in equipment and staff.

Changed Conditions Modifying Equipment.—When children attended school for three or four months out of the year it was possible for them to secure in the eight months out of school the minimum essentials of activity for developmental purposes. In addition, the life of the home provided for play in the improvised circus of the orchard gang, the field events which arose out of the chores and duties in the barn-yard and wood-shed. Children used the facilities for dramatization of the play interests.

Now, the child is in school for eight months out of the year, and in some cases ten months of the twelve. The school has undertaken a comprehensive education of the young of the human species, and is seriously setting up curricula looking for the education of the child in not only the elementary processes, but in many additional activities. Some of these were given by the home and community fifty years ago, some were never made available before for the education of the child.

This lengthened school term and the enriched curriculum have exerted profound influence upon the construction of school buildings. The one-room school is gradually disappearing before the competency of the consolidated school, and the village schools, designed to house four classes, are giving way to an establishment

that will take care of all the children in the neighborhood, and will provide them all with an enriched curriculum. Also, formerly the school was considered to be the place where children "learned." While it was later found to be desirable to have playgrounds, the play movement continued in its development outside the educational circle. Consequently, there have grown up separate and distinct boards for the organization and direction of play activities, and there has resulted such an anomalous condition that in some places the Board of Education is responsible for the education of the child's mind, the Park Board looks after the child's play, and as part of the same disjointed scheme at times the Board of Health assumes charge of the child's health. The only disconcerting aspect of this incoherent organization is the outstanding and bold fact—it is always the same child.

While the recreational movement is broader than the school aspect of the school problem, it nevertheless remains that the child's play, as well as the child's health and education, should be under a unified direction. To some extent there has been lack of harmony and co-ordinated purpose between the playground experts and the physical education experts. But there are signs that the special fields are being resolved in favor of a unified activity program which shall carry out to the playground the things learned in school. As a symbol of that better understanding, it should be noted that there is increasing agreement with the principle that all playgrounds for boys and girls under eleven or twelve years of age should be attached or adjacent to elementary public schools.

The influences which have been operative to remake the school curriculum and to construct suitable buildings have shaped the standards required for modern physical education. It is important, therefore, for both general education and for physical education to propose the objectives in equipment which are essential and desirable.

Area of the School Site —The enrichment of the curriculum in physical education by the addition of games and athletics for all has made new demands for play space. The area proposed today for elementary and high school sites gives opportunity for physical education out-of-doors.

One of the most significant results of the discussion of facilities

is the unanimous agreement on the types of play areas needed in physical education. These types include the following:

- 1 *Play lots* for babies and children up to five years of age.
- 2 *Neighborhood playgrounds* for the general play of children up to fourteen years of age and for older ones under special regulations on Saturday afternoons and in the evening.
- 3 *District playgrounds* for the active play of adults and young people over twelve years, large enough for a generous layout for games such as baseball, football, tennis, track athletics, and capable of use for picnics and celebrations.
- 4 *Recreation park*—city parks to provide for the average man and woman, as far as it is consistent with fairly intensive use, with access to large open areas.
- 5 *The reservation*—public area owned by the United States, a State, a County, or a City, similar in purpose, layout, and equipment to the recreation park, but less intensively developed and used.

Area of School Site for Elementary School—It has been customary to state the number of square feet of space per child. This has its advantages, and if it were not for the growth of the school population, the shift of communities, and the extension of buildings, this might be still a satisfactory plan. It may be desirable for new schools on the edge of the city to acquire a larger plot than is demanded by its own school population, in order to offer to the more centrally located schools the additional facilities. When the area per pupil is used as a standard, then 200 square feet per pupil is the one most approved today.

Recreational authorities and experts agree that elementary and intermediate schools should be placed on adequate sites.

1 *Elementary Schools*—The normal amount of play space per school child at the maximum development of the school should be 200 square feet (100 square feet should be the absolute minimum), and the minimum total area for an elementary school site should be eight acres, including the land on which the school itself is situated.

2 *Intermediate Schools*—The minimum total area for an intermediate school site should be ten to twenty acres.

Considerations Determining Standards.—In determining standards and amount of play space desirable it is necessary to consider

a number of features the age of the children, the size of plot, the number of children likely to use the playground at one time, the density of population per acre and density range, and the groups served.

Age of the Children.—More children per acre can be handled if the children are under ten years of age. Team games, such as basketball, require more space, because the number of players is fixed. It has been estimated that under proper organization and leadership 200 small children can successfully play upon one block of playground space. This, of course, eliminates the playing of highly organized games, such as baseball and football. On this basis each child will have about 145 square feet of playing area.

Size of Plot.—The most economical use of a minimum playground is through its maximum use each hour by different groups with the emphasis on games requiring little space. One acre used six times a day is equal to six acres used once.

The necessity of providing sufficient play space is as applicable to rural as to suburban communities. Increasing activities in rural districts are constantly demanding more space. The rules passed by the State Board of Education of Delaware regarding the size of the school sites are as follows: "For a one-room school there shall be not less than 2 acres, for a three- and four-room school not less than 4 acres."

Henry S. Curtis has made the statement that the minimum size for the ground of a country school should be 2 acres. Nothing less than this will do for baseball, and if the tract is to be used by the older people evenings and Saturdays, as it ought to be, nothing less than 3 acres will be adequate. Ten acres will not be too much for the general athletic field and picnic place for the district. If play space is to be used to the full, the school building must be placed not in the center of the plot, but at one side.

Number of Children Likely to Use Playground at One Time.—There is always a rising and falling tide of children on the playground during the day. In judging the amount of play space necessary, the size of the load must be considered, but administrative devices can sometimes be used to distribute the load. From the playground standpoint this is the big contribution of the Gary plan of organization.

Density of Population per Acre and Density Range—The number of children using a playground at any one time is much smaller than the number of children who are served by the playground, and the number of children benefited may be, therefore, from two to six times the average daily attendance. A neighborhood may be adequately provided with playground space, even if it does not have enough to care for all the children of the neighborhood at one time.

Groups Served—While the number of children in the neighborhood who need a playground varies according to the density of population and the density range, the size of the group who need and will use the playground depends on other conditions, such as the home habits of the children, the length of time the playground has been in use, and the amount of confidence which the playground leaders have inspired in the residents of the neighborhood.

Area of School Site for High School.—The high school is usually less well provided with space than the elementary school, because of the tendency to seek central location in the site, and the high value of real estate in the center of the city. In some places, however, the high school is placed on the edge of the city, in order to secure adequate space, at times plots are made available by tearing down old and worthless buildings in a slum or tenement district. While this has some advantages, the former makes transportation difficulties for certain children and not for others, a feature more disturbing to the prevailing notion of equality than to the welfare of the children, the latter, while improving a poor district and raising real estate values, also affords, as a rule, an unfavorable and restricted environment.

Strayer and Engelhardt¹ recommend:

"The site should be sufficiently commanding to give the high school building a setting in keeping with the cost of the building and the importance of the structure.

"No site of less than 10 to 12 acres will suffice for girls' play field, boys' athletic field, tennis courts, basketball courts, volley ball courts, experimental gardens, proper placement of buildings, and give desirable landscape setting. In larger cities, larger areas should be secured so as to make possible an athletic field, separate

¹ Strayer, G. D. and Engelhardt, N. L. *Standards for High School Buildings*, Bureau of Publications, Teachers College, New York, 1924.

buildings for gymnasiums, baths, dressing rooms, shops, and the like

"The area should be contiguous in nature, preferably rectangular in form. It should be recognized that outdoor fêtes, pageantry, and other festivals have become a definite part of the modern high school program, and that the planning of the site should include provision for this type of activity."

Space Required for Activities—This demand for increased space has resulted from the change in the type of program in physical education. Whereas calisthenics and formal gymnastics require about 35 to 50 square feet of space per pupil, games and sports and the outdoor program generally require a more abundant space allowance. Table XII shows the number of square feet required for indoor and outdoor games.

TABLE XII
SPACE REQUIREMENT FOR GAMES AND SPORTS

Activity	Space in square feet	Number of players	Space in square feet, per player
Baseball	80,000-100,000	18	4444-5555
Baseball, indoor	2000-2500	20	100-125
Basketball, men	2100-4500	10	210-450
Basketball, women	2450-4500	12	204-375
Field hockey	45,000-55,000	22	2045-2500
Football	50,000-60,000	22	2272-2727
Handball	1080-1440	4	270-360
Playground ball	2500	20	125
Soccer	45,000-55,000	22	2045-2500
Tennis	6000	4	1500
Track and field	80,000-90,000	20-60 or more	1200-3000

Table XIII shows the recommendations of the California State Department of Education for space, equipment, and supplies for physical education in the elementary schools.

William A. Stecher of Philadelphia has compiled a table of space (Table XIV) required for simple and highly organized games.

The following standards by Hughes have been proposed for colleges. Many of the items are applicable to the high school.

TABLE XIII

MINIMUM SPACE, EQUIPMENT, AND SUPPLIES NEEDED FOR PHYSICAL EDUCATION IN ELEMENTARY SCHOOLS OF VARIOUS SIZES, ASSUMING THE ORGANIZATION OF ALL CHILDREN AT ONE TIME FOR PHYSICAL TRAINING ACTIVITIES
Prepared by the State Department of Physical Education, Sacramento, California

Standard fields, courts, apparatus and supplies.	Ground space required for each unit, feet.	Pupils accommodated per unit at one time.	Number of each unit required in schools of the following enrollments											
			Below 50	51 to 100	101 to 200	201 to 300	301 to 400	401 to 500	501 to 600	601 to 700	701 to 800	801 to 900	901 to 1000	
<i>For younger children.</i> Field for running games for younger children Low horizontal bars Circular travel rings Bermuda grass turf plot for stunts	40 x 80	40	1	1	1	2	3	4	5	6	7	8	8	
	12 x 27	15	1	1	1	1	1	2	2	2	2	2	3	
	20 x 20	10	0	0	1	1	1	1	1	2	2	2	3	
	20 x 20	10	0	1	1	1	2	2	2	2	2	2	3	
	120 x 220	25	0	1	1	1	2	3	4	4	4	5	6	
<i>For older children.</i> Field for playground baseball and soccer football Volley ball court Basket ball court Hand ball—double court Horizontal bars Horizontal ladder Jumping standards and pits	35 x 70	20	1	1	1	2	3	4	4	4	4	5	6	
	45 x 70	10	1	1	2	2	3	4	4	4	4	4	6	
	30 x 60	10	0	0	1	1	2	2	3	4	4	4	6	
	12 x 27	10	1	1	1	2	2	2	2	2	2	4	4	
	10 x 25	15	0	0	1	2	2	2	2	2	2	4	4	
	10 x 20	20	0	0	1	2	2	2	2	2	4	4	4	
	Total space necessary (acres)		0.22	0.83	0.97	1.11	1.96	2.18	2.30	2.43	3.22	3.47	4.9	
<i>Supplies, largely for older children.</i> Playground baseballs Soccer footballs Volley balls Basket balls Inflators			2	4	6	8	10	12	14	16	18	20	22	
			1	2	3	4	5	6	7	8	9	10	11	
			1	2	3	4	5	6	7	8	9	10	11	
			1	1	2	2	3	4	4	4	4	6	6	
			1	1	1	2	2	2	2	2	3	3	3	

"Every college regardless of size should provide at least ten acres of outdoor play space

"Colleges and universities should attempt to provide one acre of play space for every 50 to 75 students enrolled

"The institution should provide at least one tennis court for every 50 to 75 students enrolled

"There should be a golf course, publicly, privately, or institutionally owned, available for use of students at a minimum cost

"Every institution should provide at least a quarter mile cinder track with suitable runways and pits for field events

TABLE XIV
SPACE REQUIRED FOR GAMES

	Players	Space needed	Space per player
<i>For simple games</i>			
Ring games	30-40	625 sq ft	18 sq ft
Tag games	30-40	1,400 "	40 "
Dodge ball	30-40	2,000 "	50 "
Volley ball	20	1,650 "	80 "
Captain ball	20	2,275 "	118 "
Playground ball	20	4,900 "	245 "
<i>For highly organized games</i>			
Baseball	18	105,625 sq ft	5,868 sq ft
Football	22	52,800 "	2,400 "
Basketball	10	4,000 "	400 "
Field hockey	22	59,400 "	2,700 "
Tennis	4	6,608 "	1,652 "

"Every institution should provide in addition to varsity facilities, a minimum of four or five separate play fields suitable for touch football, speedball, soccer, and field hockey in the fall, and baseball, playground ball, soccer, and lacrosse in the spring

"Every institution should provide separate outdoor playfields for men and women

"All outdoor play facilities should be located within convenient walking distance of the campus"²

It is obvious, of course, that space for recreation must be increased tremendously if even a minimum of opportunity is to be

² Hughes, W L. *Administration of Health and Physical Education in Colleges*, A S Barnes & Co., New York, 1935, p 324

available for children and adults. For example, New York City has a population of about 7,000,000 and less than $\frac{1}{10}$ of 1 per cent of the population is accommodated on the six municipal golf courses. This shortage suggests the nature of the problem. No one would attempt to provide public golf for all the people in New York City, but efforts to increase public facilities for tennis, badminton, hiking, swimming, quoits, curling, ice-skating, and other sports are needed.

Buildings and Fields in the Physical Education Plant—*The Gymnasium*—Too frequently the gymnasium is provided in the space left over after the assignment of classrooms. This view has obtained where the school was considered as merely a place for the teaching of traditional school subjects. Moreover, in planning for the physical education department, the future enrollment as well as the present enrollment of a school should be considered. Generally, it has been true that the facilities for physical education have been too few, too limited, and ill-adapted to a reasonable program. This condition is being rapidly corrected. The new Junior and Senior High Schools in New York City are a tremendous improvement over the buildings constructed just a few years ago. In some instances they represent ideal conditions.

Equipment for the Elementary School.—The elementary school should be equipped for physical education activities with indoor and outdoor facilities. The indoor facilities should be playroom or gymnasium.

Play Room.—Play rooms should be provided in all elementary schools. They may be combined with either the auditorium or the gymnasium. One for boys and one for girls should be the arrangement. Play rooms should be accessible to toilets and to playgrounds. Drinking fountains should be provided in immediate locality. Wall benches and wire screens for windows and electric bulbs should be part of the equipment.

Gymnasium.—Separate gymnasiums are not necessary in elementary schools where adequate play rooms are provided. If a gymnasium is not a part of an elementary school, the play rooms should be suitable for use in the various games, dance and dramatic activities, stunts and self-testing motor experiences of the program. In all cases, elementary schools should be equipped with showers adjacent to the play rooms or gymnasium. A height of

at least 22 feet is essential for play purposes in such combinations of play rooms and gymnasiums

The length and width of the gymnasium should relate as three to two, while the construction of the walls should be of such a nature as to reduce to the minimum the carrying of sound to the classrooms. A wooden floor should always be provided. The walls of gymnasiums are preferably light colored. A maximum of sunlight should be available. The ratio between window and floor area should be 20 to 25 per cent or more. Three open sides are desirable for the gymnasium. A minimum of apparatus is suggested with full provision for group games.

As auxiliaries to the gymnasium, the director's quarters, showers, locker rooms, and equipment storage are essential. Locker rooms, or gymnasium dressing rooms equipped with lockers, should be provided for all gymnasiums where the program requires a change in attire on the part of pupils. The locker rooms should be sanitary, well provided with natural or artificial light, and well ventilated. Locker rooms and shower baths should be within immediate access of each other.

Swimming Pool—Size, nearness to dressing rooms, adaptability, finish, water supply, etc., should be considered. Provision should exist for frequent and adequate cleansing of the pool, for a continuous and filtered water supply, and for the laundering of swimming suits and towels.

Equipment for the High School.—It is most encouraging to find school superintendents proposing better facilities for physical education. The following statement of standards for the gymnasium is given by Strayer and Engelhardt³

Gymnasium—The gymnasium is preferably located where the room may be flooded with sunlight and where very satisfactory ventilation is possible. The perfect location is on ground floor level and at a point which permits a correlation of work on the athletic field with the use of the gymnasium and its auxiliary facilities. This room should also be so related to the regular room facilities that the ready circulation of students from classrooms to gymnasium and gymnasium dressing rooms can be made without loss of time. Because of the desirability of using both gymnasium

³ Strayer, G. D. and Engelhardt, N. L. *Standards for High School Buildings*. Bureau of Publications, Teachers College, New York, 1924.

and auditorium for a large part of the school day, it is not advisable to plan the gymnasium as a stage for the auditorium.

The gymnasium room may have dimensions of 40 feet by 60 feet. A larger floor space 50 x 80 feet, is preferred. The height of gymnasium should be 18 feet under all beams and trestles. When enrollments in high school are planned above 800, separate gymnasiums for boys and girls should be provided. Two gymnasiums may even be necessary in schools from 500 to 800, depending upon the kind of health program which is being advanced. Where two gymnasiums are planned, it frequently is desirable to so locate them that they may be thrown into one large gymnasium for public games. In such cases, separation of gymnasiums is made possible through movable doors or through heavy canvas corridors. In the large schools gymnasiums are frequently 50 x 80 feet or 60 x 90 feet.

A hard maple floor of picked $1\frac{1}{2}$ inch tongue and groove, of $\frac{3}{4}$ inch thickness, laid over another floor of hard pine that has been laid diagonally, and blind nailed and oiled, makes the best kind. Noise-proofing material of standard quality should be built in the understructure, also such provision as will reduce vibration to the rest of the building to a minimum. Floors should be marked for indoor games. Paints of different colors may be used to mark overlapping courts.

Adequate exits should be planned, taking into consideration the large number of spectators which will frequently be assembled in gymnasiums and the possible use of the gymnasium as an additional assembly room. The gymnasium room should be readily accessible to corridors. The relationship between locker rooms and gymnasium should permit of total segregation of sexes with ease of circulation from dressing rooms to gymnasium. All glasswork indoors should be amply protected against the hard uses of athletic games. Doors are preferably made flush with walls, with a minimum number of projections. Windows are preferred on the two long sides of the room with a minimum of light at the ends. Special care should be taken to protect basketball players against end lighting. Windows should be protected against hard usage of athletic contests and should not extend to a point below which they will increase the possible injury to players. Windows should be so constructed as to permit of opening without interfering with

the wire and enclosures Overhead lighting in the gymnasium is the least desirable method of natural lighting

Outlets should be well scattered and should be so located as to prevent breakage

Types of fixtures should be used which will withstand a maximum of vibration

The construction of ceiling should be such as to permit of the supporting of swinging apparatus, and, in some cases, to assist in supporting visitors' gallery

Glazed brick wainscoting, well pointed, is desirable The upper part of the walls may be of plain brick or of any other standard construction All walls should have a minimum of projections Wall gymnastic fixtures should be reduced to the lowest possible number Radiators should be properly recessed and screened Certain wall surfaces should be prepared for handball and other similar wall games

Adequate electric outlets should be provided for clocks, bells, vacuum cleaning, and drinking fountains

Equipment of gymnasium should permit of playing American recreational and athletic games and should not follow the Swedish or German type of equipment Provision should be made for the playing of volley ball, basketball, indoor baseball, and handball. Other equipment may include climbing ropes, balance beams, provision for the high jump, vaulting buck, horizontal bars, mats, and piano Group competition should be the aim sought in the selection of equipment Additional spectators' space may be provided by planning for folding bleachers on the side walls

The planning of seating space for spectators at public games should be given very careful attention Where two gymnasiums may be thrown into one, the location of the spectators' gallery so that the galleries of the gymnasiums may be combined into one may be desirable Where the gymnasiums are planned separately, one gymnasium may be provided with folding bleachers In this case, the second gymnasium will have the minimum of seating space. Additional seating space should be planned when possible upon the main floor of the gymnasium In planning spectators' gallery, durable fireproof construction is preferred Steps may be utilized as gallery seats Stairways of standard dimensions should permit of ready exit from the gallery It should be noted that in

some plans spectators' galleries are eliminated and seating provided by bleachers alone

The efficient administration of the physical education department depends in large measure upon the location of the offices of the directors in relation to the rest of the rooms of the department. The offices should be easily accessible to gymnasium, dressing room, anthropometric or examining room, and athletic field. They should be so located as to permit of supervision of the gymnasium floor from director's office. Each gymnasium should be provided with a separate director's office.

Equipment should consist of instructor's desk, instructor's chair, visitors' chairs, filing cabinet, bookcase, first-aid cabinet and cabinet for storage of basketballs, handballs, indoor baseballs, and other similar gymnasium equipment. Provision should also be made for locker and shower in the lavatory for the director. The ball equipment should not be placed in the director's office.

Examination Room—The examination room should be located in direct connection with each director's office, also connected with locker room, if possible, so that students may be provided for without requiring separate dressing rooms.

Equipment—This should consist of scales, lounge, rest chairs, first-aid cabinet, and all equipment necessary for physical examination.

Corrective Gymnasium—Preferably approximately 25 feet square, this room is used for individual student work or for small groups needing special corrective attention. It should be adequately lighted and ventilated and located as a part of the physical education unit.

Game Rooms—Special rooms set aside for boxing, wrestling, handball, and properly equipped and planned for the service to be rendered are now being constructed.

Dressing Facilities.—Dressing rooms permitting of changes into athletic and gymnasium garments should be provided adjoining each gymnasium. These rooms should include provision for regular classes and teams. The practice of providing visiting team rooms in high school has been criticized. It makes for professionalization of the games, fosters an unsportsmanlike spirit, and militates against many of the desirable outcomes of interschool games. Bathing and locker facilities should be made a part of the equip-

nt of these rooms All of these rooms should be so located that
 ssage to gymnasium floor is made directly Adequate lighting
 l ventilation of these rooms are highly essential Rooms should
 so constructed as to permit of ease of cleaning It is also desir-
 le to have the dressing room facilities conveniently located
 h respect to swimming pool, providing it is included in the
 in Frosted glass should be used in all windows and all lighting
 tures should be protected against breakage and rough usage
 idiation should be so located as to prevent injury to students
Dressing Rooms for Girls—Formerly, individual dressing and
 ower booths were provided for girls There is a definite trend
 lay toward gang showers for girls as well as boys and the use of
 sket or box locker systems for both

The equipment of dressing rooms includes lockers, permanent
 d durable seating arrangements, mirrors, and floor boards
 air-drying machines should be installed in the girls' dressing
 oms

Toilet facilities should be provided in conjunction with all
 essing rooms

Swimming Pool.—The pool should be located so as to permit of
 lequate natural lighting and thorough ventilation and in close
 oximity to the other parts of the physical education unit The
 inimum size is 21 by 60 feet, the desirable size, 25 by 75 feet

Every precaution must be taken to maintain the highest hygi-
 uc and sanitary standards Provision may be made for spectators'
 illery

Among the items to be considered in the rating of this facility
 e the equality and permanence of installation, the purity of
 ater provided, the enforcement of rules and regulations for the
 se of the pool, including the types of suits used and the results
 scured in the treatment of water after use.

Showers should be easy of access from gymnasium, swimming
 ool, and athletic field, the number depending upon probable size
 f gymnasium classes

Boys' Locker Equipment—There should be either a provision of
 half-size locker 12 by 12 by 36 inches for each member of the
 hool, or an equipment of full-sized lockers for two large classes
 ith basket lockers 13 by 9 by 8 inches for each member of the
 hool Lockers should conform to the standards set above and be

located in locker rooms equipped with mirrors, benches, wash-bowls, etc., adjoining the gymnasium. Adequate locker provisions for teams will consist of full-sized locker to permit of all storage of athletic equipment as well as outer garments. Locker service for football teams and baseball teams will require full-length locker.

Girls' Locker Equipment—Either the individual lockers or the box lockers may be used for girls as for boys, with the same space requirements. The box lockers may be used, where the street clothes are kept during the exercise period in the dressing booths.

Indoor Gymnasium for Colleges.—No standards for construction of college gymnasiums were available until the publication by the Meylan Committee of the Society of Directors of Physical Education in Colleges of their report on Physical Education Buildings. Most of the recommendations of this section are based on the invaluable report of the Society of Directors of Physical Education in Colleges on buildings, and specific quotation is made from that report, as indicated in the text. The report recommends for the large university, such as Columbia, Harvard, or Yale, the following:

- 1 A gymnasium for freshmen, approximately 60 by 80 feet
- 2 A gymnasium for sophomores, approximately 60 by 80 feet
- 3 A general gymnasium for upper class men, for games and contests, approximately 80 by 125 feet
- 4 A small gymnasium for the faculty and for special exercise, approximately 40 by 60 feet
- 5 An indoor field for track work, baseball, etc., approximately 125 by 250 feet
- 6 Handball and squash courts, about 10 to 20 in number

For the small college with a student body of about 1000 the following is desirable:

- 1 A general gymnasium approximately 80 by 120 feet, divided into two gymnasiums 40 by 60 feet
- 2 A special gymnasium, approximately 40 by 60 feet
- 3 An indoor field, approximately 125 by 250 feet
- 4 Handball and squash courts about 6 to 10 in number

Shape—It is economical to make all rooms narrow and long, so as to reduce girder spans.

Arrangement—It is desirable to place gymnasiums side by side

This permits rooms for spectators at games, and offers additional space for college functions, particularly at commencement week. Should the gymnasium be used at any time as a banquet room, then it will be necessary to set aside adjoining rooms that may ordinarily be used for other purposes, so arranged that they can be used as serving pantries. Often it is more economical to set aside a permanent room to be used as a serving room. This room should have several pantry sinks and an exterior entrance, so that food, chairs, tables, etc., may be brought in and stored without passing through the main body of the building. It can be used as chair and table storage when the gymnasium is not in use as a banquet room.

The units of the building should be placed to facilitate supervision of the activities going on within the gymnasiums. This ideal is not always possible of realization from a single office. It is made easier "by the straight walls without bay windows, alcoves, columns, and other projections."

The locker room should be placed between the gymnasium and the swimming pool. It should be reached without passing through long corridors. It should, however, be separated by solid walls and doors from the corridors and stairways, so that the temperature of the warmer rooms may be conserved, and so that the ventilating systems of the various rooms may not be by-passed.

"Visitors should not enter the gymnasium or pool-room through the locker-room. Members should pass from the locker-room to the gymnasium, and from the gymnasium to the locker-room, and thence to the showers and pool. The reason for this is obvious."

Outdoor Facilities.—As far as possible objectives in equipment should require the use of that greatest of all gymnasiums, the *out-of-doors*. It must never be forgotten that activity which can be carried on out-of-doors is more wholesome than the same activity carried on indoors. Recently, at a State Teachers' Association meeting in the South, an enthusiast for Danish gymnastics recommended his system for the schools of this southern city. Now Danish gymnastics arose in a country where the average mean temperature (Copenhagen) is 45.9° F., and the annual mean precipitation 21.5 inches. In the West Gulf region (San Antonio, Texas) the annual mean temperature is 68.9° F., and the average mean precipitation is 28 inches. In many cities of the South it is

TABLE XV
RAINFALL AND TEMPERATURE CHANGES

Place	Annual rainfall	Type	Mean annual temperature	Type
Germany—Berlin	22 9	Light	47 3	Cold
Sweden—Stockholm	42 1	Moderate	41 2	Cold
Denmark—Copenhagen	21 5	Light	45 9	Cold
New England—Boston	44 6	Moderate	48 8	Cold
North Central—Omaha	30 4	Moderate	50 0	Temperate
Middle Atlantic—New York	42 5	Moderate	51 8	Temperate
South Atlantic—Raleigh	48 0	Moderate	59 9	Temperate
East Gulf—Miami	63 7	Copious	75 4	Warm
West Gulf—San Antonio	28 0	Moderate	68 9	Warm
Rocky Mountain and Plateau—Colorado—Denver	14 1	Light	49 7	Cold
Rocky Mountain and Plateau—Utah—Salt Lake	16 3	Light	51 4	Temperate
West Coast—Olympia	55 3	Copious	50 4	Temperate
West Coast—San Francisco	22 7	Light	54 9	Temperate
West Coast—Portland	42 7	Moderate	45 4	Cold

Regions with mean temperatures of 60° F and above are classed *warm*
Regions with mean temperatures between 50° and 59 9° F are classed *temperate*
Regions with mean temperatures between 40° and 49 9° F are classed *cold*
Annual mean precipitation 50 1 to 75 inches is called *copious*
Annual mean precipitation 25 1 to 50 inches is called *moderate*
Annual mean precipitation 10 to 25 inches is called *light*

reasonably possible to carry on out-of-doors most of the activities of physical education. A comparison (Table XV) of the climatic conditions of the three countries that have contributed gymnastic systems with typical sections of the United States is of importance

For the student interested in the question, these statements of means should be supplemented with study of the seasonal distribution. Annual rainfall may be heavy in certain months in some places and quite evenly distributed in others. Temperature variations are also significant. In the United States there are no sudden changes in climate, but transitions are everywhere gradual. Nevertheless, a program in South Carolina may not be suited to Northern Michigan or the coast cities of Massachusetts. There are, then, these climatic factors with which one should reckon.

Programs built upon indoor necessities are not suitable to places where adequate outdoor programs can be established. Colleges and schools in the United States have given increased attention to the possibilities in outdoor activities in the winter.

In the northern parts of the United States it has been customary to rely upon indoor facilities to provide the opportunity for physical education. Only recently has there been any considerable development of winter sports. Sometimes development of a winter program is accidental, and what appears at the time as a tragedy enables one to realize the possibilities of a winter environment. In the winter of 1922-23 Rockefeller Hall a dormitory at Mount Holyoke College burned, and it was necessary to take over the gymnasium for dormitory purposes. In the Annual Report⁴ of the President of Mount Holyoke for that year is the following: "The burning of Rockefeller resulted in fitting up the gymnasium for a temporary residence hall, and consequently turning out-of-doors the department of physical education, a dispensation to which the department cheerfully adapted itself. Fortunately the winter of 1922-23 seemed to have been made for out-of-door sports, and Mount Holyoke became a collegiate St. Moritz, with tobogganing, sking, snow-shoeing, coasting, skating, ice-carnivals of every description, a type of physical exercise which will be in vogue this coming autumn and winter."

In a letter from President Woolley, dated December 18, 1923, in response to an inquiry, the President writes "I was enthusiastic about the work which the department instituted when it was obliged to give up the gymnasium. Without doubt we shall keep much more insistence upon winter sports because of this experi-

⁴ President's Report, November, 1923, p. 18

ence " For many colleges, conversion of the gymnasium to other uses for a period would reveal the possibilities of an outdoor program.

Changed Conditions Modifying Staff.—The early days of physical education in America were characterized by the development of European "systems" of physical education, and of games and athletic sports organized by the students of the schools and colleges. The former received the support of educational authorities, because of the prevailing psychology and philosophy, the latter were frowned upon by the faculties, or permitted to exist on a probationary basis. Hence the training of teachers of physical education for many years was directed along the traditional lines that had been found useful in Europe. This gave a certain type of teacher who looked upon physical education as a specialty, and the gymnasium as a sanctum which was cut off from the academic work that went on in the classroom.

A number of influences have contributed to alter profoundly this narrow and specialistic point of view. It is sufficient to point out that with education conceived as a development of the individual, and with psychology marking out his essential unity, the watertight-compartment type of education had to be changed to conform to the newer concepts in this field. Physical education also changed, and with it the type of teacher, and the training requisite for this work.

The ideas of time and place determine what people do, in ship-building, in war, in art, in all the manifold activities of life. The ideas they have of reality, and the resultant action, varies with the people concerned. Aside from great cataclysmic forces overwhelming a people, such as plague, earthquake, or famine, ideas are the prevailing influences at work shaping education. There are proposals that man's life and work in the world are to be interpreted in terms of the influence of climate, and Huntington would make a strong case for winds, heat, cold, and moisture. Some endocrinologists would explain all in terms of hormones and chalone. Nevertheless, these special views are only statements of conditions which modify the reaction of people to things and to other people, in back of all the conditions of life are the ideas of the time and place shaping the responses of human beings.

The Staff in Physical Education.—Physical education as an

integral part of the process of education requires a teaching and supervising staff which is familiar with the essential purpose of education, its principles, and acceptable procedures. The activity program of physical education is supplemented by training, advisory and examining functions, so that the staff must be thoroughly informed of and sympathetically inclined toward the whole life of the school. Knowledge of the range and duties of the other teachers in the school is required, because of the close correlation of programs, and the need for enlisting the co-operation of the other teachers in the special objectives of physical education.

For purposes of education, as well as the purposes of physical education, it is never entirely satisfactory to give the responsible direction of the activity program to one who has only a technical training in physical education. At one time most of the teachers of physical education in the schools were trained in the technic of their profession without that basis of understanding which comes only with a broader and more comprehensive education. The tendency at times to place the direction of the physical education program in the hands of a college athlete or a doctor of medicine—persons who lack both the necessary technical and the general educational training—is a serious mistake.

The Educational Function of Specialists.—For some years now the specialist has attained a place of high importance. Although many jibes are made at him, he is not by common consent one who knows more and more about less and less, nor is he typically the ordinary man away from home. Whatever else he may be, most reasonable persons are willing to grant him a high degree of expertness in a narrow field. When President Butler described an educated man as a broad person sharpened to a point, he was not referring to a specialist as ordinary experience knows him.

The specialist in health education or in physical education gains no mark of merit because he knows his field. This is the least that he can be—expert in his field.

There is a disposition in some quarters, but surely not a growing disposition, to hold that a special kind of specialization prepares one to administer broadly educational programs. Nothing is more amazing than the assumption that a medical education qualifies a person for the administration of health and physical education in the schools. It is indeed unfortunate today that influences in

medicine would have us believe that the M. D. speaks with authority upon all things

Now the facts are, of course, quite the opposite. The student of medicine from the day of his entrance into medical school until he graduates from his internship is directed toward the study of disease. Even with the growing interest in preventive medicine, the youth who is to be a doctor is trained to diagnose and treat disease, the development of preventive medicine goes on in schools of public health and in health departments, not in the curriculum that attempts to produce a competent physician.

Moreover, such is the emphasis in the fundamental technical courses in the laboratories and clinics that the physician gets necessarily, and rightly so, a pathological slant on organic function. But this does not make him an expert on health, development, the interests of youth, or the whole range of educational procedures. Here clearly is a type of high specialization, but to expect the physician to be an expert in the development of health is to continue the practice of regarding the physician as also priest and prophet. Inflammation and information may look alike as words, they are immeasurably apart in meaning.

For the control of communicable diseases in schools and for certain items of the health examination the school physician is indispensable. This service, highly expert and distinctly specialized, is essential. But of all the experts in the school, the physician is generally the most narrowly specialistic, the most exclusive lone wolf in the whole educational pack. He fails time and again to see the educational implications of his work partly because he is a part-time worker with his real interest in private practice, but partly because he is looking for disease and is not concerned with educational outcomes. The spectacle of a physician examining a line of children like the inspector of some automobile assembly is disturbing to educators but arouses no protest in medical circles. Children are regarded as biological specimens with or without diseased tonsils. Among the several factors that have been designated as the reason for the rapid growth of various healing cults in our generation, doubtless school medical inspection is an important one. The impressions that young people get from their experience with school physicians are not such as to lead them to look with respect upon the physician nor to seek his services freely.

when in need of medical help. Everywhere in education the specialist faces the hazard of his own expertness, and the disposition to look upon a particular service as operating in a watertight compartment leads inevitably to narrowly conceived procedures. The health examination is for the purpose of detecting defects, but it is also an educative experience. It is more than a service, education in health is going on. Since attitudes and appreciations are so highly regarded by educators as desirable outcomes in health education it is apparent that the specialist, whether as nurse, nutritionist, or physician, must be prepared to develop desirable attitudes and foster desirable appreciations.

The physician and nurse have come into the schools to stay, but the essential problem of education is not the eradication of disease, however important this may be at times. In the remarkable advances that are so characteristic of modern public school education, the improvement in school plants, curricula, and personnel seems not more significant than the transformed point of view. Indeed it may be argued that the shift in emphasis from subject matter to children is responsible for the better school plants, the richer curricula, and the increased professional training of teachers. Out of the unprecedented interest in education the idea has emerged that the school is concerned with the lives of individuals and not with a mere conquest of illiteracy. In similar fashion health and physical education in the schools is more than the conquest of disease. This new viewpoint has stimulated the erection of modern plants, but of equal significance is the entrance of new educative forces that truly represent a broadening of educational purpose. These new educative forces are represented by the physician, the nurse, the dentist, the psychiatrist, and the nutrition expert. But these specialists will serve their educational function not only as experts in particular areas but also by understanding the major educational problems confronting educational administration.

It is of course the merest nonsense that claims for medical inspection, as now conducted by physicians, a unique rôle in the development of health. Medical inspection as a medical procedure is a protective measure. The work of school medical inspectors can be vastly improved, but at its best it is not a positive developmental force. Medical persons generally fail to understand what

development really means, and what vitality and organic vigor represent

The administration of health and physical education in any state is an educational problem. Physicians are required in medical inspection bureaus because experts in disease prevention are essential, not because they are competent in educational administration. The promotion of health involves much more than medical services. There are the equally important problems of teaching health, the organization of curricula, the provision of a healthful school environment, the development of activity programs that not only relate to organic powers and vitality but to habits, ways of living, and régimes of training that are incalculable forces in promoting health. These are educational problems that require administrative skill and knowledge of schools and children. A physician may be qualified to do this kind of work, but it is not his medical degree that guarantees his worth.

The Director or Professor of Physical Education.—In the early days of physical education in the American college the program was mainly corrective. Also, as a new member of the educational family, it was forced to build up its prestige through the best training of its members that was then available. Moreover, in the colleges, the opportunity for direction of physical education was frequently bound up with the duties of college physician. For all these reasons the early training of men and women for the more responsible positions in this field required a medical course. The logical person for the directorship of physical education in college and university has been the Doctor of Medicine (M. D.).

But conditions have changed greatly in the last fifteen years. Physical education has a place and a recognized place in the faculties of educational institutions. Although some institutions continue to minimize the educational value of the program as conducted, and perhaps in some instances with justification, in the main physical education is accepted. The need of its leaders for the prestige that will come through advanced degrees is only the need felt by other heads of departments. This can be satisfied for physical education in ways corresponding to the kind of training available for other fields.

The change in the character of the programs of physical education is one of the outstanding developments of this field. Whereas

the problems twenty-five years ago were largely medical, today they are predominantly educational. The corrective work that is necessary is being done by those who have specialized in this field, and the problems of administration and planning are not medical in scope but clearly educational. Moreover, the old plan by which the director of physical education served also as college physician has been, in large institutions, discarded in favor of a student's health service, staffed by physicians whose entire time is given to this important and exacting service. Today, with the demands of modern medicine and the large administrative tasks of a department of physical education, it is impossible for one person to discharge adequately the duties of such a combined position. For this reason, therefore, it is unwise to look to the medical field for leaders in physical education.

Conditions themselves reveal the changes that have taken place. Metcalf reports

"A comparison of the college degrees held by our membership (Society of Directors of Physical Education in Colleges),⁵ now and eighteen years ago when Dr. Storey reported on them, seems to indicate a tendency away from the medical training. During this period the percentage who are physicians has dropped from 62 to 27 per cent, and this in spite of the fact that the total number of degrees has decidedly increased. The number without college degrees has decreased from 20 to 7 per cent."

"The shift away from the medical training is especially noticeable when we group the members by decades of service. The percentage of those with medical training who have been in the work over twenty years, ten to nineteen years, and one to nine years, shows a decrease of 41 to 29 to 7 per cent."

More recently (1937) Hanson gave the information in an unpublished report that the medical personnel in the college field of the directorship has decreased to 7 per cent. This continues the rapid trend reported by Metcalf.

The logical and the competent course for the higher positions in physical education is offered by the training given through the Doctor of Philosophy (Ph. D.) or Doctor of Education (Ed. D.), in schools or colleges of education, with a major in physical

⁵ Now the College Physical Education Association.

education. Such a course will require about three years beyond the Bachelor degree, and will offer, in addition to the advanced professional work in the major, advanced courses in educational psychology, educational philosophy, administration, educational sociology, statistics and measurement, history, and principles of education. This training, together with the opportunity to do a piece of research in one's own field, is distinctly superior to that offered in the medical school where the tradition, emphasis, and atmosphere are medical and surgical, in which the treatment of disease naturally predominates. Medical training is good for the purpose of taking care of sick people. Only by mere necessity has it ever been acceptable as training for physical education. Now that this necessity is past, and opportunities are available for advanced training in education, with a major in the field of physical education, to use medical training as preparation for physical education is about as wise as to matriculate in a nursing training school to learn to teach in a kindergarten, or to study pharmacy as preparation for the teaching of botany.

Professional Training.—In general it will be found desirable for the teacher in high school to have a college degree. This qualification is increasingly asked for today. By college degree, the educational world understands and accepts the B. S., or A. B. or similar degrees awarded after four years of work of college grade. At times irregular degrees are offered in physical education, but they do not rank with the above, nor are they sufficient to permit the holder to complete the Master's degree in one year. The standard training in this field is on the whole more desirable, and because of the great and rapid development of professional training departments in college and university, there is less need than formerly for an irregular kind of training.

For the college directorships present practice suggests that playing and coaching experience is valuable. Metcalf reports "86 per cent of the membership of the Society of Directors of Physical Education in Colleges⁶ have been varsity athletes, half of them three and four sport men. Ninety per cent have coached athletic teams, and half of them have coached at least three major sports."

Moreover, it is important that the student of physical education should have the opportunity to learn his professional work in

⁶ Now the College Physical Education Association.

relation to the general field. Whereas such opportunity was not available generally twenty years ago, and does not exist in all professional schools today, nevertheless, it is inaccurate to hold that physical educators are in all instances narrow specialists. Teachers of physical education are being trained with such educational background that many are able to understand and to help in the complex problems of the school and society. This is a highly desirable result, the tendency in professional training in this field today is to extend and increase it.

Professional Ethics.—An ethic is the distillation of human experience. Social values shift, but regardless of the time, there remains a residuum of value in human relationships. The moral code of the Victorian Era may seem strange today, and yet dependability, integrity, reliability—these are always of value. To be able to depend on a doctor, to be able to trust an official, to be able to rely upon a teacher to discharge a responsibility assumed—these persist regardless of our notions about dress, dance, or play. The ethics of a profession are the items of professional behavior that have the approval of many. These may be organized into a code, but they are not created by a committee in session. They grow out of human experience and become identified with human problems, successes and failures. To the younger members of a professional group a code of ethics may serve as a standard for a time, but only as the code is adopted by them as a statement of the professional behavior they wish to support, is it a vital and dynamic theory. In a survey of professional ethics in health and physical education, a national committee⁷ compiled a number of items for a professional code. The items were scored by 312 individuals on a scale of 1 to 10, in which 10 was exceedingly important and 1 of very little importance. The recommendations of the Committee are given in the following statement:

CODE OF ETHICS

1. To live up to the rules of the conference, or league, or to the agreement between competing institutions, both in letter and spirit, in all types of interschool competition.

⁷ Chairman of the Committee: Dr. Harry A. Scott, The Rice Institute, Houston, Texas.

- 2 To give each teacher under one's supervision every opportunity for professional growth and development
- 3 To maintain in strict confidence all department or school matters not intended for dissemination
- 4 To uphold, honor, and dignify the profession
- 5 To improve in every way possible one's knowledge and skills in the profession
- 6 To maintain a high standard of health and physical fitness
- 7 To practice intellectual honesty
- 8 To refer to a competent medical doctor all physical or organic defects requiring diagnosis or treatment
- 9 To give credit where credit is due in recognizing meritorious service either on the part of teachers or pupils.
- 10 To answer truthfully all questions pertaining to professional qualifications when applying for a position
- 11 To absent oneself from school or classes only for good reasons
- 12 To give each pupil an equal opportunity without individual prejudice
- 13 To set a high standard of conduct at all times for those coming under one's supervision
- 14 To bring to the profession all knowledge, skill, and devotion one may possess
- 15 To give one's employer ample notice if a new position is accepted.
- 16 To give credit to the proper sources in the matter of borrowed ideas
- 17 To insist upon the proper conduct of students whenever they are under one's direct supervision.
- 18 To vacate one's position only after all records are in such a state as to be readily understood by one's successor
- 19 To accept proper criticism in a gracious manner and if in error to remedy the fault which called for the criticism.
- 20 To ascertain the exact meaning of written and verbal contracts and to live up to them in letter and spirit unless dissolved by mutual consent, and with amicable results
- 21 To maintain a tolerant and open-minded attitude toward others in matters where opinions differ This does not imply that strong convictions shall not be held

22 To refrain from discussing the deficiencies of one's colleagues in such a way as to embarrass them

23 To practice absolute and unqualified loyalty to the school and department in which one is employed, and to the profession

24 To insist that one's salary be paid through regular institutional channels, and not directly from alumni groups, local school supporters, or athletic gate receipts

25 To refuse to promise a position to a candidate until it is authorized by the proper authorities

26 To recommend a teacher for another position although it may be desired to retain him or her in one's employment

27 To refrain from dismissing, or recommending for dismissal, a teacher without giving ample notice and an opportunity to be heard

28 To actively support all movements directed toward an improvement and elevation of the profession

29 To be definite in the exact type of work expected when employing a teacher

30 To defend members of the profession if unjustly attacked

31 To maintain membership in and attend meetings of such professional associations as cover one's field of special interest

32 To maintain a noncommittal policy in public on all controversial issues arising within the school

33 To extend professional courtesy, including the prompt answering of mail, to other members of the profession at all times

34 To refuse to discuss matters of student discipline with anyone except the proper authorities

35 To accept a position only if one is qualified to handle it effectively

Summary.—From the foregoing considerations the following may be summarized

1 Changed conditions in society, particularly in the home, necessitate a far greater participation by the school in the education of children today than in the Nineteenth Century; this changed condition requires that physical education take over the physical development of the child, a matter that was cared for previously by his natural play life

2 The recognition of the unity of the individual corrects

former attitudes toward play, this changed view requires adequate allowance for the education of the individual through play

3 The school plant should be constructed to serve the educational and wholesome recreational needs of the community

4 Growth in understanding of the purpose and possibilities in physical education has led automatically to an increase in the size of the physical education plant.

5 Climatic conditions should be factors in determining the type of equipment as well as type of program in physical education

6 The best gymnasium for many places is out-of-doors

7 The widely varying qualifications of those who are asked to teach and direct activities of physical education demand care in the selection of candidates for positions

8 Administrators err frequently in choosing two types the varsity athlete, who knows how to play some sport, but little of education, the specialist in physical education, trained from the view of the gymnasium only, who knows very little education

9 The doctor of medicine is not qualified by his medical degree alone to direct an educational activity, such as physical education.

10 Since the pressing problems are educational and not medical, the director of physical education should be trained through his professional and educational courses for his work rather than through medical courses which have little to do with his work

11 Teachers of physical education gain no mark of merit because they know their field—this is expected.

12 The doctor of medicine is prepared professionally to treat sick people

13 The function of the specialist in the schools is to supply expert advice on technical matters in which he is competent, to conduct technical services for which he is responsible, and to co-operate understandingly in the solution of the common problems faced by all workers in education

14 An ethic is the distillation of human experience

15 Codes are valuable as they serve to shape professional behavior

QUESTIONS

1 What changes have taken place in apparatus in three-quarters of a century?

- 2 What conditions have modified equipment?
- 3 Why is there division of authority with respect to the child's play? Do you favor this? Explain your answer
- 4 How many square feet per pupil is approved for the elementary school site?
- 5 Where should the gymnasium be located?
- 6 What is the relationship of climate to the need for indoor facilities?
- 7 How do conditions modify our ideas about desirable staff members?
- 8 What is a specialist? What are his functions?
9. What are the distinctions between specialist and generalist?
- 10 Why is the doctor of medicine not necessarily a specialist in school health? What would make him one?
- 11 What is the function of the nurse in the school?
- 12 How should persons be educated in order to take charge of responsible directing positions in physical education?
- 13 What is an ethic? What is a code of ethics?
- 14 How do codes of ethics come into existence?
- 15 When teachers accept positions for which they are not qualified, are they acting ethically? How do you know?
- 16 Do you defend members of your profession who are unjustly attacked? Why?

REFERENCE READINGS

1. Bureau of Education, Department of the Interior, 1928 Preparation of School Grounds for Play Fields and Athletic Events, Physical Education Series, No 1
- 2 Casey, D A Stadium in the City-of-the-Average, *American City Magazine*, August, 1924, pp 121-128
- 3 High School Buildings and Grounds, Bulletin No 23, 1922, Department of the Interior, Bureau of Education
- 4 Lamar, E The Athletic Plant The McGraw-Hill Book Co, New York, 1938
- 5 Luehring, F W Swimming Pool Standards A S Barnes and Co, New York, 1939
- 6 Monroe, W S The Duties of Men Engaged as Physical Directors or Athletic Coaches in High Schools, Bulletin No 30, University of Illinois, Urbana, Ill
- 7 National Study on Professional Education in Health and Physical Education, *Research Quarterly*, December, 1935.
- 8 Report of the Committee on Professional Ethics, *Journal of Health and Physical Education*, November, 1930

9 Report of the Committee on Professional Curriculum, *Proceedings College Physical Education Association*, 1935 and 1936

10 Report of National Survey of Secondary Education, Health Work and Physical Education, Bulletin No 17, 1932, Office of Education, Washington

11 Standards of Equipment and Program for College Girls, Report of the Women's Division of the N A A F

12 Strayer, G D. and Engelhardt, N L Standards for High School Buildings, Bureau of Publications, Teachers College, New York, pp 9-14, 70-78 Standards for Elementary School Buildings, Bureau of Publications, Teachers College, New York, pp 35, 37, 38

PRINCIPLES OF METHOD

“What really should be studied by those who are preparing themselves to teach and to direct the work of education is the aim of the educational process, its most useful subject-matter, its philosophic basis, and the history of its development. Very little time should be spent upon methods of teaching. Methods of teaching are purely personal, and are the effective application by an individual of the controlling principles upon which his work is based. Excessive devotion to the study of method quickly develops an educational self-consciousness that is destructive either of true effectiveness or of a correct relationship between teacher and taught. Given the possession of sound principles of education, the teacher should then be left with the least possible direction to give full expression to his own personality in his method of teaching.”—Butler

CHAPTER XII

Principles of Method

Scientific Method.—It is a commonplace to say that we live in an age of science. But this is only partially true. Science dominates many of our human activities and yet in a countless number of ways we continue traditional and superstitious practices. We of this century are more scientific than our ancestors ten centuries ago, but unwarranted practices still prevail.

In educational practice, scientific methods are not everywhere pursued. Many old procedures persist in spite of newly discovered improvements. The basis of scientific method is very simple. It consists of careful observation of phenomena, accurate reporting of the data, and interpretation and presentation of the results for criticism and review by others. There is in scientific method no plea for special interpretation based upon an individual's unique powers or experience, no police authority to compel acceptance of the conclusion, and no disposition to keep the process of discovery secret.

Historically, teaching has been considered an art. Art and science pursue different paths, their methods contrast. Science is fundamentally analytical. It breaks things up, seeks details, and searches for causes and conditions. Art is ever engaged in giving meaning to experience. It puts things together. It is synthesis rather than analysis.

Science and Art in Teaching—It is sometimes said, "The good teacher is born not made." Teaching requires imagination, facility in seeing relationships, perspective, and creative skill. These are essentially the qualities of the artist rather than the scientist. Moreover, it is argued these qualities are inborn, and hence training of teachers is only wish-fulfillment "like dreams in the Freudian theory."

But in any art, spontaneity, perspective, creative skill are dependent upon technic. The imagination is never free to operate when technic interferes. It is not the untrained who are spontane-

ous, vital, and free but those to whom technical skill has become second nature

When teaching is regarded as a science, it often assumes mechanical aspects. In this kind of teaching the technics of standard tests, achievement scores, and examinations are prominent, and correspondingly, there is likely to be neglect of concomitant values and disregard of personality adjustment problems. The athletic coach is frequently forced by the practical realities of his job to win games or to lose his post. In such a situation he is quite unable to consider the more subtle problems concerning the effect of particular experiences in individual athletes. So, conditions force a mechanical approach to the problem.

When, on the other hand, teaching is regarded as an art, the dominant spirit is concerned with creative purposes which can be developed in students, with the doors of the mind which can be opened. This mood is not limited to appreciation courses but can operate fully in systematic science courses, such as anatomy, mathematics, and practical activities.

The outcomes in students are not easily measured nor are they the ready-made answers of the text or syllabus. This does not mean, however, that skills will not be learned, or that exact knowledge of a field will not be mastered. Indeed, the good teacher will always be a master of his own field and will lead his students to seek a similar excellence.

Methods and Objectives.—It is a vital principle of teaching to consider methods in relation to objectives. What is the outcome desired? To secure this outcome, a particular method is selected. The close relationship therefore of method to objective forces the thoughtful teacher to examine the two together. Devotion to a method as a procedure that is unrelated to objectives ignores a vital principle in teaching.

Illustrations of a close correspondence between method and objective are numerous. In Germany in the Nineteenth Century the relation of the individual to the state reveals more accurately the ideas that molded practice. The king and subject relationship was strong. The church and school maintained these bonds by preaching and teaching. The teacher-training institutions were tuned to patriotism as the central theme. In the regulations of a seminary at Pyritz, piety was to be shown, among other ways by

"respect for the king, our sovereign, and by unshaken fidelity to our country"

The method of Nineteenth Century German education was directed at objectives. The Germany of National Socialism is equally realistic. The following statements are reported by Kandel from the *Allgemeine Deutsche Lehrerzeitung*

"The taste for militarism must be inculcated in children, they must be told this at every opportunity that every man of noble birth must be a soldier—Frederick the Great, in the issue for September 2, 1933

"Rigorous discipline is desirable at a given time. The same discipline imparts the qualities needed by the soldier and the scholar, in fact there is no competent scholar who does not possess the instincts of a good soldier. What should a rigorous school teach?—Obedience and command—Nietzsche, in the issue for September 23, 1933.

"I know that we Germans will be victorious in the next war, it is the will and the way of God. Simply because it is our turn, no one can resist our health within and our young strength. But such a nation whose hour sounds, must arm itself within and without . . . in such a way that it will lead us to victory and to power. Who could then be the heart and head of Europe?—Gustav Frenssen, in the issue for October 14, 1933"¹

In these days of economic, political, and social disturbance it is important that Americans recognize the relationship between method and objectives. Those who wish to see the perpetuation of democratic institutions and processes in the United States need to be concerned about the objectives held for education. Is there a place for initiative, resourcefulness, independence of judgment, freedom of expression, individual leadership or are the goals docility, submissiveness, and mass discipline? Method of one kind can be employed to secure the kind of objectives desired, but its opposite will fail. Educational method which requires uncritical obedience, acceptance of authoritarian statements, and external discipline is not focused upon the objectives of the historic American democracy.

The Range of Objectives.—The teacher may focus attention

¹ Kandel, I. L. *The Making of Nazis*, Bureau of Publications, Teachers College, Columbia University, New York, 1935, p. 75

very properly upon a single and immediate objective. One cannot teach in general, one teaches particulars. Particular learnings have specificity, they occur in time and space. While this is true in teaching, it is important, however, for all teachers to recognize that learnings in one experience may be many. A teacher may be intent upon teaching how to pitch a baseball, but he should be aware of the fact that the pupil learning the skill is also acquiring other learnings. The wide range of teaching objectives should be indicated therefore. They may be discussed under three types of learnings.

Technical Learnings—The obvious results of technical learnings are the particular skills taught. For example, the technical learnings in baseball are how to throw, bat, catch, and run. In learning how to bat, this is broken down into the stance at the plate, how to hold the bat, the position of the arms in the swing, timing the stroke, how to judge good balls, and similar points. Often persons believe that these comprise all that the player learns. They are only a portion, however. Other learnings take place, also.

Associated Learnings—The body of ideas associated with an activity may be large or small, significant or trivial. Ideas of how to train for an activity, how to overcome fear of the water, how to acquire neuromuscular relaxation, how to maintain a high level of energy, how to use strength in lifting, how to play a game according to set rules—these may be important learnings and illustrate aspects of mental content in the motor field. Too frequently method focuses upon the technical alone and neglects the associated learnings.

Concomitant Learnings—Technical and associated learnings do not exhaust the field. Other important learnings occur.

In the performance of any motor activity, one learns attitudes toward the activity and toward others engaged in the activity. It is clear that these attitudes may have no relation to the excellence with which the other learnings are acquired. Thus, one may become most proficient in swimming and be a thoroughly poor sport, or one may be only moderately skillful in motor skills and still be a generous, kindly, and fair player. Some of the concomitant learnings which are often sought are giving the best that is in one, finishing the task begun, accuracy in completing assign-

ments, integrity as respecting the rights of others, generosity to opponents and faithfulness to associates

The relationship of method to concomitant learnings is peculiarly important. Consider what are those learnings when a physical activity is presented by a teacher who is a rigid formalist, a strict disciplinarian, believing in the objectives of docility, submissiveness, and obedience.

What does the boy or girl think about physical education under such methods? Why do some boys and girls come to college seeking to be excused from required physical education? What do they think of play? Is it mere fooling that leads nowhere? What are their ideas of self-expression in relation to honesty and excellence? Do they think of their bodies as splendid means for expression or as machines for the manufacture of perspiration? How do they feel toward authority? Do they chafe under it? Do they get any idea of what self-discipline means? What do they think about self-discipline in relationship to friends, to the school, to the nation? How far and to what extent are they co-operative toward ends that they know about, have helped to set up, and are willing to work for? Surely no partisan of effort in physical education can neglect to answer such questions.

Moreover, it is the validity of concomitant learnings which makes the theory of interest so attractive to so many serious and consecrated workers. The appreciations, the ideas, and the attitudes developed, and the extent of their usefulness in a democracy such as ours depend upon the judgment we give in this trial of interest and effort.

Many Methods and One Is Best.—The best method is the one that accomplishes the desired objective. It is best only in relation to its objective. If individual and group welfare is important, the method that meets the situation with greatest advantage to the individual and to the group is the best method. With the goal of the highest individual development in relation to social welfare uppermost, it ought to be clear that the teacher must stand ready to meet situations rather than give allegiance only to a theory of action. There are times when play breaks down due to disturbing individuals. There are individuals who have never learned any self-direction at all. To give such persons unlimited freedom without opportunity to learn what liberty means, and how it is attained,

is a serious mistake in method. The teacher must be ready to help out in the management of an activity. The teacher, as a member of the group, is therefore a responsible leader as well as a thoughtful follower upon occasion. Moreover, it is a plain truth of the matter that a formal method may be required, not for any special virtues to accrue from its use, but because it offers a way to meet a situation with greater profit to the individual and to the group.

It is with this reservation in mind that the student should examine all methods. One may become convinced that the interest of the individual is the greatest force for worthwhile, continuing activity. This conviction then takes a prominent place in shaping method. One may become convinced also that interests are not always wholesome, that some individuals are not co-operative members of a group. This appreciation stimulates the teacher to discover ways to keep desirable activities going while he seeks means of fostering wholesome interests, to devise methods of protecting group activity while dealing with a recalcitrant member or members.

With this fact established, the principles underlying methods may be discussed with reference to the three types of learning that take place. It is obvious that technical learnings are not isolated from associated or concomitant ones, and that method in one area has applications in others. Nevertheless some principles have more direct application in one learning situation than another. It is merely a matter of emphasis.

Method in Technical Learnings.—There are many principles of teaching that relate directly to how an activity should be handled in order that children may learn it. These have meaning for method. In the following discussion the principle will be stated and its relation to method indicated.

Organic Vitality Is Developed by Exercise—The only agency available for the development of the vital organs is exercise. Heredity and nutrition influence this development, but it is exercise that secures development.

Method will be employed therefore to provide vigorous physical activity presenting increasing physiological demands on organic functions up to optimum levels. In general, excessively severe activities are rarely found in school programs. These programs are probably not vigorous enough. On the other hand in highly

specialized sport and in modern dance projected toward the stage, there are numerous examples of improper and excessive demands upon the organism

Growth Requires Activity—This is especially true during adolescence. In this period of rapid growth, motor skills appear often to be lost. The individual is awkward. Things are knocked over, broken, or spilled. Conscious attention to these imperfect performances confuses.

Generous but not too strenuous participation in sports and rhythmic activities is required. Activity and time restore the old skills and even improve them. Method will avoid punishment, ridicule, and such cruel approaches. Encouragement, rewards, approval, a generous amount of activity, and patience—these are the cues.

Proceed from the Known to the Desired Unknown—The known is familiar ground. The use of "lead-up" games in teaching sports is an illustration of the principle applied to method. In such progression the teacher will proceed in relation to the individual's motor sense and kinesthesia. This means teaching activities within the range of the pupil's motor experience. An exercise in baseball would not be appropriate for a first-grade child. New activities to be experienced should be interpreted in terms of old activities that have meaning.

Rewards Are Superior to Punishments in Promotion of Learning—The after-effects of reward and punishment influence the learning situation.² Reward gives a greater gain in learning than punishment. The best method is to reward the correct response rather than to punish the incorrect. The best results in the use of punishment are obtained when the annoyance then and there encourages or causes the operation of the right connection and the accompanying satisfaction.

Persons learn better when a situation possesses its own intrinsic value rather than an extrinsic one. Mere repetition is wasteful. The value of repetition in learning resides in the after-effects of the process.

Fear of punishment may act as a motivation and hence lack of punishment may become in effect a reward. In the use of punish-

² Thorndike, E. L. *The Psychology of Wants, Interests and Attitudes*, D Appleton-Century Co., New York, 1935.

ment, Thorndike suggests that there are five important guides to keep in mind

- 1 Make sure that the punishment used is related to the act.
- 2 Forestall the punishment where the want that caused the offense can be satisfied innocently
- 3 Shift the emphasis from the discomfort of one situation to the relief, security, and comfort of the correct situation
- 4 Arouse confirming reactions by attaching relevant satisfiers to the connections desired in place of the wrong connections for which punishment might be required
- 5 Make punishments rational and reasonable when they still remain important means of control

Learning is facilitated when the teacher can analyze the fault or difficulty and suggest the cue which will secure the correct response

This requires expertness in a wide range of skills. If the teacher is competent, there is much help that can be given. In directing the learning of a motor skill, the teacher should know (1) The best form for performance of the motor act, and (2) How to analyze the act to discover what the pupil should do in order to learn the skill. Correct form is essential and early practice should be based upon this. After early attention is given to form, then attention should be directed toward results rather than form. Focus of attention on form interferes with the ability to "let go." Timing and co-ordination are dependent upon relaxation, objective attitudes, these are impaired when form is the focus.

Drill is important in fixing the skill learned, in perfecting its form, and in acquiring satisfaction in the experience

Mere repetition may yield nothing in learning. Drill must relate to outcomes that the pupil cares about, they must appreciate the relation of drill in parts to the accomplishment of the whole. Rogers' study on the learning of game skills is important in this connection. Some persons never experience much satisfaction in motor activities because they remain dubs, ever unskilled performers. In youth if they had drilled enough to do well an activity the reality of satisfaction would have appeared. It seems to be true

¹ Rogers, Elizabeth. An Experimental Investigation of the Teaching of Team Games, Bureau of Publications, Teachers College, Columbia University, 1936

that participation relates to proficiency Drill is important in proficiency

Levels of Accomplishment Should Relate to Development of the Individual—It is a mistake to seek high accomplishment at the higher levels of performance too early The following roughly outlines the age levels at which emphases may be made

Age 6-11—period of generalized activity.

Age 10-12—period of beginning technic

Age 12-15—period of team play

Age 16 and on—period of speed and skill

For the beginner in any motor activity⁴ it is always a mistake to seek speed before technic is acquired (Some activities proceed better when performed rapidly rather than slowly, notably balance activities) This view supports Poppelreuter's law of practice that requires, for optimum results, retardation of speed of movement in the early stages of practice until high accuracy is attained and then increase of speed gradually⁵

Method in Associated Learnings.—The fundamental problem in teaching is to extend the learnings that children acquire For example, it is not sufficient to teach correct spelling, it is imperative to have this skill extend into reading and writing There is a kind of reciprocity in such matters A teacher may teach a boy how to run a 100-yard dash, but if this learning extends into how to condition oneself and reading about great sprinters, there is not only these associated learnings that are valuable in themselves, but reciprocal emphasis upon the technical skills also There are several principles that bear directly upon associated learnings

Interest in an activity provides the drive to engage in it, insures more rapid learning, and is a factor in satisfying experience The brief for interest in physical education claims an identity between the activity and participant; a relationship which is the sole guarantee of unified response It notes that a child may be put through a set of exercises, but claims that there is no assurance that co-operation is present, because there may be the nearly perfect outward performance, and at the same time definite inward

⁴ This is recognized also in the teaching of handwriting, piano playing and typewriting.

⁵ McGeech, J. A. The Acquisition of Skill, *Psychological Bulletin*, August, 1929, p. 470

rebellion. It claims for the theory of interest a reality between activity and participant which precludes divided attention. Moreover, the brief for interest in physical education sets forth that over and beyond the effects of any period of exercise there must be recognition of the necessity for a continuing action, there must be developed a love for and a skill in some form of wholesome physical activity that will continue after school days are over. It contends that interest in the exercise is the only guarantee of such future participation.

Other positive claims are brought forward to present the case for interest in physical education, the relations of interest to the laws of learning, to the achievement of hygienic effects in exercise, and even to the correction of physical defects and deformities are prominent ones. But its brief also includes criticism of the theory of effort. It finds that any task carried on under compulsion, as it needs must be when it comes as a task, is rejected as soon as the pressure to do it is relieved. There is, therefore, no provision for a continuing activity. It notes, also, that even in the theory of effort there is reliance upon the fundamentals of interest in carrying on its program, only the interest is an ignoble one, an appeal to fear, or a sentimental one, an appeal to love of teacher. Instead of unified activity due to the identity between activity and participant, there is divided activity whenever the theory of effort is in force.

Moreover, the product of this theory is not the desirable citizen so often put forward to justify its practice. In the main the application of the effort philosophy results in rebellion of many individuals against authority. The history of nations in bondage, the tragic breaks in homes, the desertion of the school by many children, indicate the rebellion to this theory of effort. Those who survive the process are either narrow, obstinate, dictatorial, made in the likeness of their masters, or are dull, spineless, broken, submissive creatures, obedient and docile because the "vital juice of spontaneous interest has been squeezed out."

When a boy throws an object he gets satisfaction in the act because he is ready to be exercised in precisely that kind of thing. The boy is interested in activities which involve throwing, because the exercise or organic arrangements involved provide satisfaction. In similar fashion, climbing, hanging, leaping, running, and

associated movements are of interest because they exercise organizations already present and ready to function. These organizations are just as real as the boy's bones or muscles, although they cannot be described in detail, their performance is governed by certain laws on the whole better formulated than those relating to muscular contraction. It is important to understand that the human individual is organized to take interest in and enjoy a wide variety of physical activities which relate to his social life.

Study of the psychology of interest reveals the identity of the individual with the object. There is a connection between the actor and the act, an indissoluble bond between the two. To take interest in an activity is to have the appropriate organizations concerned in a state of readiness to act. All is prepared in the body's organization to bring the desired result about. In such a situation the mind is set toward the end to be achieved, and the whole organism is ready for the experience. Thus, the presence of the appropriate object or situation calls forth the appropriate response, and in thus responding we take interest. We are dealing, therefore, in this analysis with a scientific fact, not a mere sentimentality. The preparation of this chapter took hours of time, required the reading, digesting, and annotating of many books, journals, and papers, and led to several conferences. But it was not a task, the mind was set toward an end, interest was there as a fact.

It is at this point that we need to comprehend the fallacy that shows in the dictum "that one should make the work interesting." Frequently, indeed, one hears this advice when a program is criticized for its lack of interesting material. This idea that artificial exercises are "to be made interesting" suffers from two pernicious errors. In one case it bases the selection of subject matter not upon native capacity, desire, or need, but upon certain artificial criteria of political or social sanction at the time. In the second case, it is confronted with the necessity of devising external and artificial procedures in method for dressing up an unrelated and meaningless activity so that it will attract some attention. The spectacle of children in school going through a calisthenic drill in artificial movements, moved either by love of teacher or fear of teacher, when never of themselves would you see them voluntarily engage in such activity, is a common illustration.

Such presentation of the theory of interest frequently brings out the question, "Do you mean to say that children should do everything that they please to do?" There is no need to jump to such an extreme position by either the most ardent advocate of interest or the most carping critic. The implication is perfectly clear, activities should be selected in physical education in relation to the child's experience, drives, needs, and capacities. Not all impulses are of equal worth, nature is not always right. At times the relevancy of acceptable material must be brought to the consciousness of the child, but in relation always to the things which already are appreciated, have meaning, and are of interest. Children are not to be permitted to do everything which interests them, but things that they are led to do must be in their very nature interesting. It is mistaken zeal and poor teaching to attempt to make unrelated material interesting. Such implies at the very outset that it does not possess the quality of giving satisfaction, but must be dressed up.

Ultimately, of course, one's reaction to this view is determined by what one is trying to do. Is there any effort to build up an enduring activity which will, under proper guidance, provide health, motor skills, and growth values as by-products, or is the effort one that seeks to develop unrelated and frequently useless skills as ends in themselves? Is there any effort to cultivate joyous appreciation of wholesome activities which will continue after school days are over, or, is there a Puritanic dislike of joy and an academic disregard for play?

Consider the practice so stoutly defended by those who follow the theory of effort which permits and encourages children to work for years with the stilted, artificial, and deadening movements outlined in the syllabi of many cities and states. Consider the practice in so-called school gymnastics aimed at the correction of postural defects by ten minutes of exercise daily in the classroom, ignoring the physiological and psychological factors in postures. The posture problem in our schools is in part tied up with the domineering type of teacher who cows her pupils, who relies on fear as a motive, and who gets not only submissiveness of mind and spirit, but also of body. The question of posture must be viewed not merely as a problem in body mechanics, but also in its relation to fatigue, to nutritional and emotional states.

Interest in an activity to be experienced rests upon psychological rather than logical grounds.

The moment one has an interest in an activity, there is a drive ready to set it going. This contrasts with the orderly and logical arrangement of learning that adults have often proposed for children.

The old method of progression in school subjects was the *logical*. In teaching reading, for example, the procedure was to teach the alphabet, then words of two, three, four, and five letters, etc. Now in observing children it has been found that the first words they might desire to learn to spell or read were not those in the logical order. Thus, even before the alphabet is learned, a child may wish to spell "candy," "dog," "rocking horse," etc. The new approach to progression is to teach and give opportunity to learn according to the awakening interests of the child. This method of progression is *psychological* and not *logical*.

A similar situation exists in physical education. The systems brought to this country and perpetuated as formal gymnastics were extremely logical. Men had certain muscles and certain parts; they were to be exercised in order and sequence. Arm, leg, and trunk exercises were to follow in *logical* progression. Now the psychological approach in physical education considers the nature of the child and proceeds in line with the individual's impulses and organic urges. The third-grade child is interested in climbing, the sixth-grade child in team games. These are characteristic traits of the period. They become the guide for the progression—the guide is *psychological*.

Procedure along the psychological line would mean that the motor problems were to be raised to consciousness as problems of the children. The teacher is not to exercise the class, in working to gain certain power over pertinent motor problems, and important social (team) problems, the class will get exercise as a by-product of an activity that goes on because it is worth while to the individual or the group.

Interest in an activity promotes retention of the learnings acquired, the guarantee of carry-over resides in both the nature of the activity and in the interest developed in it.

The doctrine of interest should never be viewed as opposed to true effort, because true effort finds its clearest illustrations, if

necessary, in relation to interest. Life does present difficulties, obligations that we would wish away if we could, duties that knock upon the door of interest and time. And in the face of difficulties, of obligations, of duties, we want to see developed a real persistency in attack, and a thoroughgoing continuity of activity begun. Effort merely as increased strain is not the goal, but true effort toward the fulfillment of a growing and expanding activity. It is important to state, therefore, that what is wanted is not effort for its own sake, as the formalist would ask for, nor for some distant, unappreciated value, but true endeavor in relation to an end that is worth the energy put forth. Further analysis of this type of effort points to two considerations.

1 With such endeavor in mind let us think about one engaged in an activity which is not successful because of an impending obstacle. A condition of mental stress occurs, the end of the activity calls him to continue, the obstacle bids him give it up. As a mental experience, therefore, there is a combination of conflicting urges away from and towards dislike and longing.

2 Up to this point activity has been blocked of its end. The difficulty should lead one to stop and think. Is the end worth going? The two-miler is hopelessly outclassed! Shall he give it up as a bad job? Is there a better course available? Even if the decision is to give up, the whole situation is different from giving up because of mere weakness of will. If the giving up is decided, it may be "quite consistent with tenacity" of purpose. Or, instead of giving up, it may mean that a new course of action has been decided upon. The problem has been taken out of the field of unintelligent effort and vain struggle, and has entered into the realm of consciousness and thought. Energy has been transferred from blind struggle and diverted to thinking. This not only makes him more conscious of his end, and increases interest, but through reflective thought he comes to make more intelligent effort in the rapidly expanding activity.

Hence we are to distinguish between effort at a task which has no meaning, no interest, that is wholly alien and uncongenial, which is kept up only by fear or other prods from the teacher, and true endeavor which leads from an activity with interest and meaning to reflective thought concerning the obstacle encountered, culminating in frank abandonment of the project, or in the

discovery of new ways for continuing the activity which in itself is a growing and expanding one full of thoroughgoing purpose

This view predicts a different approach in teaching physical education. Instead of the teacher being a dynamo for arousing energy in a class, he becomes a leader for the direction of energy already available. It is with this method that we must study the teaching of all activities. Here is a program involving a great many valuable and essential skills and body controls. Instead of the teacher leading the class in the formal way, with a conscious purpose to get uniformity of response, the teacher might introduce the class to a number of motor problems related to real interests. The individual makes the effort, for the problem is an individual or team problem for the individual to work out. The newer methods in the teaching of swimming make use of this same approach, and the difficulties of the stroke, of balance, of breathing, are brought to consciousness, to reflective thought. Here, through this method, we have the richest opportunity for the development of thinking, a real educational basis for physical education, at once a challenge and an opportunity.

Awareness by the learner of the objectives of an activity and the learning

These precise ends become targets at which to aim, this helps the shooting. This is true for all types of learnings, but it is particularly important for the associated outcomes. The athlete may well become aware of a number of objectives in addition to the technical gains and as these are accepted as legitimate goals, the stage is set for learning them.

The use of achievement levels in motor skills and of knowledge tests of rules and training is illustrative of modern methods in helping pupils to become aware of objectives.

Learning results from doing. Activity in which the pupil becomes a responsible agent rather than a tool manipulated by the teacher is typical of learning by doing.

Education for many years and in some schools today places reliance upon a procedure of learning by discipline rather than learning by doing. This view is represented by the theory of formal discipline and has enjoyed acceptance from time to time in physical education. The spread of dictatorial methods of government with their corresponding control over national educations

challenges all teachers to understand the full implications of the discipline.

Formal gymnastic material is artificial, with no organic relationship to man's natural movements, egocentric in type, and without the sanction of any of the sciences, with the possible exception of military science, and in that instance it is approved more because of the method usually associated than for any intrinsic merit the material itself possesses

The above position is increasingly appreciated, but some physical educators, unable to accept the conclusions of a logical process of reasoning, are driven into the position where they claim that formal gymnastics are suited to the needs of the schools as they are equipped, staffed, and administered today. This is a very plausible position, until you examine it carefully, and it appeals particularly to some because its defenders can claim for themselves practical virtues

It ought to be clear at the outset, in considering such a question, that any program which is justified because of inadequate physical equipment, teacher shortage, or other handicap loses its validity the moment these conditions cease to exist. The very weakness of the position is shown by the fact that schools are being built and organized today to carry on a modern, progressive program of physical education, it is tradition alone that forces on the same old program

Any program in America which fails to recognize the nature of the individual, and the needs of a democratic society, but proceeds rather upon a basis of physical limitations, is pursuing bankrupt methods, and will fail to pay dividends. With regard to responsibility in this matter, it should be clear that school administrators are to be held accountable equally with specialists in physical education. Moreover, the superintendent of schools cannot with justification say, "I know nothing about this, that's the reason we have an expert to determine the program." It may be granted that he need not become familiar with the detailed procedures but with the general aim, character, and nature of these activities he must be conversant or jeopardize his right to leadership in the education of children

Finally, it should be noted that, where argument will not convince, the final test is the well-controlled experiment. In all

respects, this is the preferred method of conviction. To give different and typical programs to different but equal groups, and to measure the results, would seem to be the sensible thing to do. This has been done and should be repeated by numerous other workers.

Formality in method is employed whenever several persons are brought under the direction of one leader. A teacher with only two children will set up some systematic ways of doing certain things. Any teaching of groups requires some formality. The real question at issue is whether the formality is a necessary means, used purposely for organization, or a device for securing certain disciplinary objectives. Apart from the necessity for organization whenever a group is taught, the formal method in physical education is advocated usually for values supposed to reside in the method itself. Here then are contrasting points of view: one holds that formal procedure is necessary to the extent that is required by the legitimate goals and sanctioned objectives of the activities, the other contends that the formality is an end in itself and should be employed because it is good for children to be disciplined under such procedure. These two positions are presented in the following discussion of interest and effort in physical education.

The theories of effort and formal discipline are essentially one. They base their claim for attention upon a belief that by doing an unpleasant thing one gains a kind of useful power. They frequently lead by the sheer logic of the case, to absurd ends, as when Emerson, in his lecture on Compensation, argues that if one will be good (goodness consisting in doing what is uninteresting) one may have, at some future time, a great many interesting activities—that is, may then be bad.

In viewing formal discipline, it should be remembered that historically it has been profitable for king, lord, and ecclesiastical powers to foster obedience to divine authority; to cultivate docility and submissiveness in general.

Undoubtedly the extreme cultivation of submissiveness in the masses restrained progress. Men who have perpetuated submission rather than experimentation, curiosity, and kindness have hurt mankind. We see today the acme of such submission in the stupid mass following of Hitler, the same quality trained into the Italian people, and the extent to which an emperor and ruling caste may promote the same thing, as in Japan.

There are other aspects to this theory of effort and formal discipline. We need to consider the group of related attitudes which grow out of any activity in which one participates. In physical education of the formal type, there is seen a practice which gives outward obedience with inward rejection. An experience which outwardly yields while inwardly rejecting is significant particularly, because of the related attitudes, the concomitant learnings. It is important to investigate this point more at length.

Method in Concomitant Learnings.—Technical learnings yield skills, associated learnings yield knowledge, concomitant learnings yield attitudes and appreciations. There are no watertight compartments around these, attitudes influence the learning of skills, and skill enriches appreciation. But the importance of concomitant learnings should never be denied or neglected. The principles underlying method in these matters are presented in the following discussion.

Human behavior is dependent upon a multiplicity of factors, elements, and influences both within and outside the organism. This complex variation is accountable for the fact that every person differs from every other person.

The principle of individual differences is rich in its suggestions for method. All children cannot be held for standard or norm performances. Goals must be set for groups in which individuals have membership because they fall within the specifications of the classification. Similarly all pupils will not gain identical associated and concomitant learnings. Indeed a teacher may teach all children in a class the same dance, but because of individual differences they will vary not only in their motor performance but far more markedly in the other learnings.

Knowledge must serve some drive before it influences conduct. Bacon's dictum that "knowledge is power" cannot mean always power in good behavior.

Thought is personal, belonging to the individual who has or expresses it. When the correct act gives satisfaction, this works backward to strengthen the connection.

Things acquire meaning in a new setting or situation. This is the Gestalt view but it differs in no respect from Thorndike's idea of readiness and his analysis of change in the situation. The essential difference is that the Gestalt theorists explain the phe-

nomenon as due to some inner entelechy Thorndike recognizes the physiological changes which go on in the organism modifying response Here is a precise situation, the individual responds It is the individual responding however His response is based upon previous connections made but the quality or quantity of response is not solely dependent upon these There are physiological factors that modify ⁸

The influence of participation in physical education activities in producing or modifying human responses in habitual behavior affects what is called personality and character

The relationship between tests of character and tests of strength of grip is practically zero, and that existing between health and character tests has very little correlation It is becoming increasingly clear that what is recognized as desirable character comes out of experiences which are constructively wholesome, stimulating to effort, helping toward distant but recognizable goals Indeed, so complicated is the problem that once and for all physical education must abandon its usual practice of claiming character education in general

Character may be defined as that way of behaving which takes into account the remote implications and consequences of action Character, as so defined, is the product of environment and heredity, of both nature and nurture, it results inevitably from the play of various forces in nurture upon the biological materials of man

In the area of character education there are many forces at work creating the varied situations in which and to which the individual responds A situation exists and the individual reacts This is experience and out of this the individual builds his life The character resulting flows from the experiences he has The only test of importance is to what extent young persons are taking part in wholesome, constructive, and worthy experiences

No place is more important for formative effects upon individual lives than the home. It rarely realizes its opportunity Parents devoted to business, gossip, amusement, or even worthy community enterprise fail conspicuously to deal adequately with the only reality of importance in the home—the particular child

⁸ Symonds, P. M. *Education and the Psychology of Thinking*, McGraw-Hill Book Co., New York, 1936.

or children in the home. Some strange vagary of human nature leads parents, otherwise well disposed toward social gains, to neglect the immediate practical problems of their own children. Recognition of this failure of the home leads the school to take over the responsibility with teachers who themselves have little understanding of the problem. The school devoted to its traditional program of transmitting the social inheritance neglects the biological needs of children and pays scant attention to avocational interests which are called extracurricular activities. When the school has concerned itself with character education, it has too often resorted to precepts, punishment, and procedures of like form and content.

If character education is to be undertaken by the school, it must consider methods of getting boys and girls to plunge into worthy enterprises, working with others to make high purpose and fine vision come true. In physical education there are many opportunities to help boys and girls arrive at a point of view about life, to acquire principles by which they live, and to understand their experiences in terms of the goals they have for themselves. Illustrations of the process in a variety of situations are in point.

It is widely accepted that boys and girls should acquire the attitude of giving their best. This needs examination. One's best is frequently not given because, in the first place, the situation is without interest or meaning. One gives one's best when the activity has worth in one's judgment. This attitude is not to be confused with effort as a theory of action.

Secondly, someone else has not done something. "Mary didn't do it," is a frequent response. Lack of performance is never justified in unrelated instances on someone else's failure. Wherever you find excuse for lack of performance, this will be a common one.

Thirdly, contrary attitudes have been learned. The following of any attitude is not evidence that justice has been done. The right act and one's judgment of the right act are not the same thing necessarily. They may coincide, but they are not bound to do so. Appeal to conscience does not bring freedom from injury to the individual or group. Regardless of the motive, or the regrets, or the excuse brought forward, the act is done and its effect on others is a real thing.

A football coach some years ago saw this situation clearly, and taught the lesson that all should learn. A player who had been absent from practice the day before would be asked by the coach concerning his absence. The excuse may have been illness, or other work, or anything. Such excuse may be justified, but the coach would point out that it does not relieve of the responsibility for being at practice. The player was missed, harm was done to the team, he should have stayed well. An excuse never substitutes for the actual performance.

The effort to present an excuse for accomplishment is not surprising, as it is probably true that this player, as many others also, had been taught zealously from youth that when something is wrong he must do something and get it right. Beyond this he will have been told that, if he is conscientious, he will always try to be right and not wrong. This desire to be right becomes an obsession along with his purpose to satisfy his conscience that he is right.

On analysis it is seen that one's insistence on satisfying conscience is merely an attempt to unload responsibility. He has been taught by precept and example to deal with difficulties by excuses. He wishes to satisfy his conscience when the greatest need is to put into operation his reasoning intelligence. If intelligence could break through the fog of conscience and wanting to be right it would reveal that the chief difficulty was in the high feeling coming from the criticism for which he develops a defense reaction in the form of an excuse. This salves his conscience by appearing to himself as justified, as right. He will grow, of course, only as he is ready to accept that he is wrong.

This same perversion is seen in numerous activities in physical education, although not here alone. A student learning a new stunt on an apparatus may approach the apparatus, and, before trying the stunt, remark, "I can't do it." This is getting an alibi ready beforehand, so that, when urged to try, the probable failure may be minimized by the remark, "There, I was right; I told you I couldn't do it." Such a situation should be met at the start by the teacher not permitting the attempt until the student can say, "I can do it." If then the student fails of success, the teacher should help the student to understand that it is not essential that he succeed. The only essential is that he do his best. These

are the facts for the student to face; and teaching should help students to face facts. The facts are the football player did not do his work, the student in the gymnasium missed the vault. The individual should face the facts and not try to excuse himself.

The individual who is continually late, absent frequently, or failing in assignments and reports, throws into clear light the chaotic condition of individual programs at times, and the corresponding lack in fulfilled duties. Too many little side shows, too many unredeemed pledges, too many unfulfilled responsibilities! Excuses for these persons fan the flames that destroy effective personality.

Other standards taught by parents are frequently narrow and selfish. Frequently a generous, social view in giving one's self is smothered by the admonition to save yourself. Too often the narrow view is defended on the basis of love; the parent loves the child so much that he does not wish the child to do anything that may not appear at the moment pleasing to the child (again this is not to be confused with the theory of interest). Rabbi Wise once said, "Children should love their parents more and honor them less, and parents should love their children less and respect them more."

One may not give one's best because the conditions are not known. The standard performance that represents "best" is not understood. There may be an attitude of willingness to give the best, but he does not know how to do so. Effective teaching supplies such lacks.

Socialization is an important outcome in physical education activities. Civilized human relationships and expressions are learned reactions.

An illustration of the problem is given in a discussion of courtesy. The attitude of courtesy is not expressed because, first, there are strong, instinctive impulses to get what one wants without thought of others. The development of courtesy is not to lead to weakness in personality, but to strength. In no sense is sympathy to be confused with courtesy. The sympathy that weakens one's courage, that seeks absolution for failure, is well contrasted in Gentry's great play, "Pasteur," with worthy sympathy for a worthy situation. Girls who receive physical injuries need to be carefully handled or the impairment of the moral fiber will be more damaging.

than injury to muscle, bone, or connective tissue. Epithelium for purposes of development of character should never compete with the nervous system

Secondly, man has difficulty in being courteous because his social development has been with small groups, and large groups are relatively a new thing. He is courteous to friends, but not to the public

In the third place, fatigue and ill health may be related causes.

Lastly, other standards may be operative. Thus one may be courteous when it pays, but real courtesy is without reference to returns. Or traditional standards may be operative, e. g., one may be courteous to business associates, but not to his wife and family

One or more of these conditions may exist, and analysis of the situation by the teacher should assist him to help the student obtain the desired response

Opportunity to manifest an attitude in several situations is helpful in learning. Wide use favors habit

There are two attitudes which illustrate the principle here. One is finishing the task begun; the other, accuracy and thoroughness in work. The work is not completed frequently because of two reasons. In the first place, it fails to provide an incentive. A difficulty is met, there is mental stress between going on and giving up. Such is an intellectual problem. Shall one go on, how may the difficulty be overcome? If an incentive is lacking to go on the difficulty is sufficient reason for stopping. It may be unwise to go on, a two-mile race, for example. However, the essence of this attitude is to be achieved in relation to an activity of interest, and even then it may be undesirable to complete even that project of tremendous interest.

In the second place, this attitude is not developed because of a distorted view of one's place and importance in the scheme of things. This is illustrated by the player who quits the squad because he fails to secure a varsity berth, or teacher who stays one year in a place and then gives it up because of difficulties. This is the kind of person who would stop running to base because he was sure he would be put out, and would give up trying to guard an opponent because he was sure he would make a goal.

Accuracy and thoroughness are not present often because it requires diligence to be accurate. The lazy person is only accurate

by accident. Failure to know the rules is a common illustration of lack of thoroughness and accuracy. Here is an enviable teaching situation, exact knowledge and a precise practical situation to give it expression

Teachers and parents too readily accept inaccurate and general statements when accurate, specific ones are called for Too frequently general statements are accepted with the assumption that the student knows, but cannot express the idea The fact is the student does not *know* He may have a general, hazy idea, but he does not know This is seen at times in grading examination papers when credit is given for part of the answer being right It is ridiculous to credit as correct the addition, or division, or multiplication, if in the final process the subtraction is wrong and answer wrong It would never be safe to build bridges with such engineering methods This point should not be confused with imaginative activity in a young child

The development of attitudes must consider appropriateness of time, place, and condition for their appearance The question, "Should fourth grade children be expected to show thoroughness in gymnastic work," may be answered by saying that attitudes and responses are to be expected when the work which is suited to the characteristics of the group call for those responses. The propulsion for attitudes is to come from the work done, and the work selected to be done must be selected on a *psychological* and not on a *logical* basis Thus, whenever it is physiologically and psychologically desirable for children to compete in competitive athletic events, it is desirable to expect that the response of "giving one's best" will be seen.

Summary.—The following summarizes the principles of this chapter

- 1 Teaching is an art It is, concerned with skills, knowledge, and the *meaning* of experience
- 2 Methods are ways selected to achieve objectives.
- 3 The major problems in method comprise three phases (1) how to secure most efficiently technical learnings, (2) how to stimulate and make available associated learnings, and (3) how to present and make challenging those attitudes and appreciations that are the core of concomitant learnings When these phases are mastered, the teacher has the answer as to method

4 The best method is the way which will accomplish the objective most efficiently and most surely

5 The period in physical education should be conducted as an opportunity in which physiological considerations are important, but not exclusive. To *learn* wholesome activities, to *be interested* in them, and to *react* favorably toward wholesome standards are significant items in physical education

6. Physical education in the school should be conducted as a part of a unified whole in the education of children. The gymnasium should not be a place "where children go to exercise," but a part of the whole educative experience of the child

7. Method should consider the stage of development of the pupil

8 Rewards are superior to punishments in promotion of learning

9. Analysis of a skill or problem by the learner or teacher facilitates learning. Cues are important in all teaching of skills

10. Drill as mere repetition is worthless, but in relation to ends sought by the learner it is an essential

11. Interest in an activity provides the drive to engage in it, insures more rapid learning, and is a factor in satisfying experience

12. Interest in an activity to be experienced rests upon psychological rather than logical grounds

13 Interest in an activity promotes retention of the learnings acquired, the guarantee of carry-over resides in both the nature of the activity and in the interest developed in it.

14 Awareness of the learner of the objectives of an activity aid the learning

15 Learning results from doing. This process of doing reflects the psychology of interest

16 Human behavior is dependent upon a multiplicity of factors, elements and influences, both within and without the organism. This complex variation is accountable for the fact that every person differs from every other person

17 The influence of participation in physical education activities in producing or modifying human responses in habitual behavior affects what is called personality and character

18 Socialization is an important outcome in physical education activities

19 Opportunity to manifest an attitude in several situations is helpful in learning

QUESTIONS

1 Why should the aim of the educational process be studied by teachers?

2 How do you distinguish between the science and the art of teaching?

3 Why must the teacher be a master of his field?

4 How is method related to objective? Illustrate this from Nazi Germany

5 What democratic viewpoints are affecting method?

6 What are the distinctions between technical, associated, and concomitant learnings? Do all occur inevitably?

7 Can method aid in teaching a technical learning? Explain Is method of value in other learnings? Explain

8 What is the best method to use in physical education? Why is this so?

9 How does method relate to the development of organic vitality?

10 Why should we proceed from the known to the unknown?

11 Why are rewards superior to punishments in learning?

12 What is analysis in teaching?

13 What is the function of drill in learning?

14 How do levels of development relate to method?

15 What is the value of interest in promoting learning?

16 Should one try to make a lesson interesting? What are the limitations of your answer?

17 Should individuals always do everything in which they are interested? Why?

18 Should individuals be interested in what they do? Why?

19 What is logical progression? Psychological progression?

20 How does interest promote retention of learning?

21 Why should the individual be aware of the objective of the activity? How can this awareness be aided?

22 What is learning by doing?

23 What is formality in method? When is it used? What are its functions?

24. What is formal discipline? How does it relate to learning?

25 How do individual differences affect method?

26. How do we learn attitudes?
27. How do we learn socialization?
28. How do we acquire a sense of justice?
29. Why is it necessary to manifest an attitude in many different situations in order to learn it?
30. What is generalization?

REFERENCE READINGS

1. Averill, L. A. *Adolescence* Houghton Mifflin Co., Boston, 1936
2. Chamberlain, L. M. *The Teacher and School Organization* Prentice-Hall, Inc., New York, 1938
3. Davis, E. C. and Lawther, J. D. *Successful Teaching in Physical Education* Prentice-Hall, Inc., New York, 1941
4. Dodge, R. *Conditions of Human Variability* Yale University Press, New Haven, 1935
5. Hartshorne, H. *Character in Human Relations* Charles Scribner's Sons, New York, 1935
6. Overn, A. V. *The Teacher in Modern Education* D. Appleton-Century Co., New York, 1935
7. Sharman, J. R. *The Teaching of Physical Education* A. S. Barnes and Co., New York, 1930.
8. Smith, H. N. and Coops, H. L. *Physical and Health Education* American Book Co., New York, 1938
9. Struck, F. T. *Creative Teaching* John Wiley and Sons, Inc., New York, 1938.
10. Umstattd, J. G. *Secondary School Teaching* Ginn and Co., Boston, 1937
11. Zachary, C. B. *Emotion and Conduct in Adolescence* D. Appleton-Century Co., New York, 1940.

TESTS AND MEASUREMENTS OF PHYSICAL EDUCATION

"Never before have we had to rely so completely on ourselves. No guardian to think for us, no precedent to follow without question, no lawmaker above, only ordinary men set to deal with heart-breaking perplexity. All weakness comes to the surface. We are homeless in a jungle of machines and untamed powers that haunt and lure the imagination. Of course our culture is confused, our thinking spasmodic, and our emotion out of kilter. No mariner ever enters upon a more uncharted sea than does the average human being born in the Twentieth Century. Our ancestors thought they knew their way from birth through all eternity. We are puzzled about day after tomorrow"—Lippmann

CHAPTER XIII

Tests and Measurements of Physical Education

A Changing View of Measurement.—In recent years a new point of view has emerged out of the testing and measuring of children. The goal of exact measurement of all achievement has faded into the background and a saner view of the educational process has taken its place. The earlier purpose emphasized the scientific elements in teaching, the later one would use the scientific technics now available, indeed would seek for additional ones, but also would wish to consider the art elements in teaching and the human aspects of the problem.

When teaching is regarded as an applied science, like engineering, the elements which characterize the mechanical arts are usually prominent. There are certain justifications for this view of course. Many processes develop in teaching which are susceptible to orderly arrangement, systematic treatment, and mechanical precision. The use of standard tests for classification and tests to measure achievement has tended to reinforce such practice by the exact record of results. Thus, there may be too great devotion to a measure which is final in form but quite incomplete in nature. This is the weakness of the earlier testing methods. If there is neglect of the personal elements in the situation, there is apt to be manifest a consequent disregard of concomitant learnings. In the face of devoted efforts to secure measurable outcomes, such as speed in running or height in jumping, there is the tendency to neglect the social justifications for running and jumping. The coach, driven by the necessity to win games, has a very exact and practical measure by which he judges the players. The obviousness of the measured outcome often hides the indirect values in a situation. If any particular percentage of games won is essential in having a sport season adjudged successful, then one is faced with the necessity in which statistical averages or percentages may completely obscure standards of educational worth based on ideals.

Again, the ease with which measurable outcomes manifest themselves renders more difficult the recognition of the intangibles in the situation

The Function of Tests.—The realization of values in teaching which are not subject to exact measurement has led, therefore, to a broader view of the functions of tests. At the beginning of the testing movement, tests were regarded as hurdles to be jumped, barriers to separate those who do from those who do not. A more acceptable practice, now highly approved, uses tests of classification and achievement to place better the individual or group in the educational situation, to arrange better the materials of instruction, and to guide better the individual in relation to his capacities and skills

This use of tests for increasing individual interest in activities, for development of abilities, and for selection of proper materials of instruction means, of course, not a lesser but a greater emphasis upon scientific method in teaching. We need still to know much more about the achievement levels in motor skills of individuals, what programs will produce, not only the most satisfactory growth increments but also the most satisfying individual experiences as well as the most acceptable social outcomes. It may be that the social outcomes lie outside the field of a reasonable testing program today, but if this be true there remains the necessity to use scientific tests and measures for the other purposes

It may be stated, therefore, that tests are not ends in themselves, they are merely means by which teachers may hope to better the work of teaching boys and girls. The test may be an important measure of achievement but the most important aspect of the question is what happens to the individual after he takes the test

The Backgrounds of the Testing Movement.—The use of measures to determine anatomical characteristics is quite old. In its crude form it goes back to early beginnings of civilized life. The effort to secure measures of functional capacities is more modern and corresponds with the relatively recent emphasis upon the dynamic as against the static, or the physiological as against the anatomical

A rough sort of anthropometry was carried on by certain Greek sculptors but Quetelet is generally recognized as the orig-

inator not only of the word anthropometry but also of its first techniques. In America, Hitchcock at Amherst, Seaver at Yale, Sargent at Harvard, and Leonard at Oberlin carried on exact anthropometric procedures which accumulated a great deal of data on skeletal and muscular measurements of boys. Hanna of Oberlin and other women collected similar anthropometric data on college girls. During this period, the physical education program reflected the influence of this movement. Students were examined and on the basis of bodily measurements were given prescriptions of exercise designed to secure a bilateral symmetry in form and strength. If the left upper arm was not as large as the right, the prescription included exercises to increase the size of the left upper arm. Some look back upon this period as highly scientific and doubtless in its procedures it should be so regarded. The anthropometric period in physical education, however, is a beautiful illustration of the way in which scientific procedures may be so selected and used that other values are ignored by the simple process of focusing attention upon one aspect of the problem. Then the emphasis was upon structure. Today, this emphasis of thirty to forty years ago seems quite faulty, highly undesirable, and of little productive value but this present judgment arises out of a recognition of other elements in the problem of educating boys and girls. Now, the emphasis is upon function.

An illustration with similar lessons may be given from present-day experiences. A director of physical education for men in a state university arranged a plan to measure the student's ability in handball. The corners were marked with circles and scores were given for ability to place the ball within the marked areas. The students were induced to practice these shots with the hope that they would be able to play better handball and with the assumption that they could be scored more exactly. The procedure had two results: first, the student might be able to score high in such tests and still play a poor game of handball, and second, the students began to lose interest in the game. The purpose of the department was to promote activities, and hence the test was abandoned since it interfered with that purpose.

The beginnings of functional tests are found in the measures of strength which fascinated so many of those working in the field of physical education thirty years ago. Sandow as the typical strong

man had made strength rather popular and public interest could always be aroused in feats of strength long before such contests colored the early social gatherings of our pioneer ancestors. Sargent and others devised ways for measuring the strength of muscles, but Kellogg's strength test, obtained by a rather complicated machine which measured all muscle masses, marked the decline in this interest as other values were recognized. Again the shift of professional judgment was from the static to the dynamic. Not how strong, but what capacity to use strength seemed now important.

Following the period marked by interest in strength tests, a greater variety of functional tests were proposed. Many were designed to measure cardiac function and others to measure athletic ability. This period extending over the past twenty-five years has been largely without critical standards for determination of validity and reliability of the tests. Thus several tests which were supposed to measure the same thing, for example, circulatory efficiency, fail to correlate at all. Many other tests have been lacking in proper definition and the terminology has been indeed confusing.

The Statistical and the Clinical Approach.—Education has its styles as does medicine, architecture, and clothing. A few years ago it was popular to have a deviated septum, then autointoxication became prominent among the ills of man to be followed by acidosis, and more recently arthritis. Statistics in recent years have dominated education. Many think this to be unwise dominance.

The statistical approach to any problem limits the student to the services which statistics can contribute. Based on the law of averages, this approach is valuable in science where the factors in a situation occur constantly in the same way under controlled conditions. Thus, standards for the broad jump for twelve-year-old boys can be prepared by selecting a group of boys, measuring their ability to broad jump under conditions controlled by the research, and then treating the data statistically.

In the field of health, physical education, and recreation, there are a number of objectives, however, which do not lend themselves to the statistical approach. Health offers a good example of such objectives.

Health is a term representing many functional elements in the individual with various compensations and adjustments which correlate toward a unified condition. Health, therefore, is not a unit quantity or quality and it is, therefore, impossible to establish norms for it using statistical procedures until every element in the total can be measured and the adjustments determined. By statistics it has been impossible to arrive at a measure of "normal health," and hence the more acceptable approach to a problem of this kind is the clinical one.

The clinician views the term *normal* with suspicion and prefers to use the word *negative* to indicate that he finds no evidence of disease or disturbance in a particular function. He knows that individuals vary so much with respect to certain qualities that he is skeptical about terms such as average, typical, or standard. He contends further that variation from a statistical norm or standard may not always constitute abnormality. Thus, he prefers to describe an individual by using adjectives which express the characteristics found in the individual.

The clinical approach is the method of choice of the athletic coach. There are numerous statistical measures of precise athletic skills, such as running, jumping, throwing, kicking, tackling, and catching. Most contests, however, require a blending of these skills with certain qualities such as courage, initiative, drive, emotional stability, and analytical thinking in order to achieve success in a contest. The football coach knows that excellence in one or two skills is not enough to guarantee success in the whole performance.

As progress is made in measuring qualities in the individual in addition to the motor skill he possesses, the statistical approach in sports may be used increasingly. Likewise in the area of health—measurement of ability in adjustment and correlation may be combined with norms for red cell count, hemoglobin index, pulse rate, vision, hearing, and numerous other functional norms now available. At present, however, such synthesis into a health norm is impossible.

Common Errors in Measurement.—The measurement techniques are exacting, and much experimental testing is wasteful because errors are made in fundamental procedures. These are the four processes in which errors occur: 1. selection of faulty instruments,

2 incorrect use of a valid instrument, 3 unsound interpretation of results, and 4 failure to use the results

The Selection of Faulty Instruments—Instruments are faulty when they fail to measure what they are supposed to measure, therefore they lack *validity*. They are faulty when the test employed fails on retest or with another form to give comparable results, therefore they lack *reliability*. They are faulty when the personal equation of an examiner alters the result, therefore they lack *objectivity*.

The first criterion is that of *validity* of the test. Does it measure what it is supposed to? Is it valid? Several tests of circulatory efficiency fail to correlate and thus indicate a lack of validity in one or more of them. They may be good tests for something but they lack validity if they do not measure what they purport to do.

The second criterion is *reliability*. This criterion refers to the accuracy of the test. If it is reliable it will give the same score approximately when given at different times and by different persons. Thus if a test is to measure basketball shooting it should give a score that is fairly constant at different times. If a person can score high at one time in the test and very low at another time under similar conditions, then the test is not reliable. It has been impossible to devise tests that are 100 per cent reliable but wide variations in scores indicate unreliability. Various statistical procedures are available for testing the reliability of tests.

The third criterion is *objectivity*. This quality in a test precludes the influence of the person giving the test. The subjective element in a test is manifest when an individual is given a choice in interpreting results. If the test shows objectivity, then the results of the test are free from subjective judgments by either pupil or teacher. Physical education tests are commonly very objective since they exhibit objective units in time or distance. When tests of "good posture," tests of form, and similar vague and illy defined states are to be measured, then objectivity in the test is apt to be lacking. These three, *validity*, *reliability*, and *objectivity* are essential in a good test.

Since there are numerous problems in physical education in which the objective character of exact measurement is lacking, the experimenter resorts to scales rather than tests. Thus posture may be treated by the scale method such as shown in Brownell's

study.¹ Since there are many subjective elements present in the building of a scale, various devices are used to secure judgments that show common qualities and the scale evolves then from a large series of cases in which the trait to be measured is empirically defined. When the test is not suitable for measuring qualities of form, the scale properly constructed is a helpful tool in physical education.

Incorrect Use of a Valid Instrument—The instruments may be valid, reliable, and objective, but improper use may destroy the results. The stethoscope is a valid instrument for listening to the heart but accurate observation depends upon removal of the clothing. The dynamometer is a valid instrument for measuring the strength of muscular contraction but it is incorrect to use it for measuring intelligence, beauty, or health.

Unsound Interpretation of Results—One of the common errors in measurement is to judge that data collected, that mean one thing, mean something else. Howard² cites this error in the development of his observation technique for rating basketball players.

Failure to Use the Results.—Aside from values of research, the purpose of tests is to improve instruction, to arouse interest in pupils, or to diagnose difficulties. In most school situations the sole justification is in teaching rather than research. The immense amount of unused anthropometric data existing today in physical education offices is an example of conspicuous waste.

Principles of Measurement.—There are several principles which support the measurement movement. The more important of these may be discussed as follows:

Whatever Exists at All Exists in Some Amount—Even such abstract concepts as "goodness" and "beauty" exist in particular and so existing possess items of identification. To the extent that there are particulars, then there is a reality. Qualitative values are also real. They are difficult to measure, however, to the extent that they exist, they too possess reality and exist in some amount.

¹ Brownell, C. L. *A Scale for Measuring the Anteroposterior Posture of Ninth Grade Boys*, Bureau of Publications, Teachers College, Columbia University, New York, 1928.

² Howard, G. W. *A Measurement of the Achievement in Motor Skills of College Men*, Bureau of Publications, Teachers College, Columbia University, 1937, p. 2.

Examples of this type are ability to dance, to swim, or to play tennis. What exists as quantity, such as height, weight, blood pressure, hemoglobin, heart rate, foot size, speed in running 100 yards, is easily measured because there are tools and techniques at hand. What exists as quality is often an expression of many factors and, although there may be tools to measure some, often the identification is difficult and the whole process lacks conviction.

Anything that Exists in Amount Can Be Measured—This principle does not imply that instruments or procedures are available today to measure everything that exists in amount. Nevertheless the principle is sound and its application only awaits the perfection of instruments to this end.

All Measurement Is Not Perfect—Most texts have some weakness. In dealing with man, the great complexity of the organism presents a difficult problem and attempted measurement of one trait may, in fact, be dealing with many rather than one factor. Evaluation of programs by measurement should depend upon the avowed purposes of the program.

Accurate measurement is important, but its value depends largely upon its use as an instrument of evaluation.

Measurement Is Indispensable to Growth in Scientific Education—Unless we measure, we must guess. Outcomes will result regardless, but, without measurement, what outcomes and to what extent remain unknown. A national committee reporting upon evaluation methods suggests how "Health Service" might be evaluated.

"To what extent are the remediable defects as disclosed by the health examination corrected?"

"To what extent does the health service program lead to wise and intelligent self-direction of the individual with respect to professional health service?"

"To what extent is the general environment of the college influenced by the policies and procedures operative in the health service program?"

"To what extent does the health service program encourage an understanding of an active interest in a community health program (the community of which the student is a member)?"

"To what extent does the health service program of the college

influence or stimulate desirable broader concepts of, and an active support for, state, national, and international health?"³

Until measurement can discover to what extent health service reaches objectives which are commonly held for it, growth in this aspect of education is retarded.

Measurement Is Only a Part of the Program—Measurement is important but it is not all. To focus all effort upon measurement is faulty and subject to the same criticism which should be directed toward all partial and limited programs. No program is adequate without some measurement, no program is well-balanced when measurement occupies a disproportionate place in the time and energy of the staff.

The Measurement of Fitness.—During or following wars there is inevitably an interest in fitness. The neglect of measures for developing and maintaining fitness results in unfitness for war and this revelation is always disturbing enough to focus attention on the problem. Invariably the term physical fitness is used. This seems to imply the fitness which can be achieved through exercise, although in reality fitness is total. Indeed mental and emotional factors are important in fitness.

Moreover, fitness is specific. Fitness for football and fitness for ping-pong are not the same thing either in kind or degree. Fitness for clerking and fitness for heavy manual labor are not identical. Obviously there is a favorable condition of the individual under which he performs his work—whatever it is—in the most efficient way without undue fatigue and with the least expenditure of energy. Such favorable condition varies for all individuals and in all cases there are several factors, physical, mental, and emotional. It is everywhere apparent that there is no physical fitness apart from mental and emotional fitness. Coaches frequently experience the difficult problem of conditioning men in whom there is a disturbed emotional state or non-acceptance of the self-discipline necessary in training.

What makes a youth train, condition himself, and follow a regimen of personal hygiene? It is the team to which he belongs—an athletic team, a school group, a family, an *idea*. The first

³ Second National Conference on College Hygiene, National Tuberculosis Association, New York, 1937, p. 45.

approach in developing fitness is therefore mental and emotional and this is followed by or accompanied with the physical. Until this is understood with all its implications for educational practice and governmental policy, fitness will remain a myth which only the naive will clamorously pursue.

It is apparent then that efforts to measure fitness confront the same difficulties faced in measuring health and athletic ability.

Measurement of Functions.—The measurement of any function is a more simple matter. If care is taken not to claim too much, one can readily determine how the individual responds to exercise, what improvement he shows, how far to carry the process, and similar exact determinations of functional activity. Thus, anthropometric data will reveal the effects of any program upon skeletal and muscular changes if other elements are controlled, measurement of respiration and circulation will reveal how exercise affect these, and athletic performance tests will show the progressive change in status in simple patterns such as running and jumping.

Classification for Physical Activity—Over the years there has been a great deal of interest in methods of classification for activity. There are numerous tests for fitness to participate. Height, weight, age, pulse rate, and even school progress are used to determine classification. Commonly used tests are Foster,⁴ Schneider,⁵ Crampton,⁶ Sargent,⁷ Barringer,⁸ Rogers,⁹ Larson,¹⁰ and Burpee.¹¹ These tests do not all correlate and hence do not measure the same

⁴ Foster, W. L. Test of Physical Efficiency, *American Physical Education Review*, November, 1914, p. 632.

⁵ Schneider, E. C. A Cardiovascular Rating, *Journal American Medical Association*, May 29, 1920, p. 1507.

⁶ Crampton, C. W. Blood Press., *New York Medical Journal*, November 8, 1903.

⁷ Sargent, D. L. The Physical Test of a Man, *School and Society*, January 29, 1921, p. 128.

⁸ Barringer, T. B. Circulatory Reaction to Graduated Work as a Test of the Heart's Functional Capacity, *Archives of Internal Medicine*, March, 1916, pp. 365-381.

⁹ Rogers, F. R. Physical Capacity Tests. A. S. Barnes and Co., New York, 1931.

¹⁰ Larson, L. A. A Factor Analysis of Motor Ability Variables and Tests, with Tests for College Men. *The Research Quarterly*, October, 1941.

¹¹ Burpee, R. H. Seven Quickly Administered Tests of Physical Capacity. Bureau of Publications, Teachers College, Columbia University, 1940.

thing Rufenberick¹² finds a high correlation between physical capacity tests and pulse ratio tests. One type of measure of fitness for activity is found in indices such as Pignet's which derives from a formula designed to determine robusticity¹³ Pignet's formula is.

$$I R = \text{Height} - \text{chest circumference (taken at rest)} + \text{weight} \\ (\text{Measurements in centimeters and kilos})$$

Its use shows that in consideration of robusticity, one must be mindful of stature, weight, and chest circumference Tall men were found in the army experience to be less capable of performing long marches and to be more frequently on the sick list

The following are Pignet's standards

A = Under 10	a very powerful constitution
B = 11 to 20	good constitution
C = 21 to 25	mediocre constitution
D = 26 to 30	weak constitution
E = 30 to 35	very weak constitution
F = Over 36	bad constitution

There are numerous indices that have been used in physical education They are not employed to any great extent today The index of Quetelet is the best known It is expressed

$$\frac{W}{H^2} \text{ in which } W = \text{weight and } H = \text{height}$$

Summary—The following points summarize this chapter

1 A changing view of the function of measurement in education gives consideration to method by which the results of measurement may aid in teaching

2 Tests are not ends in themselves

3. Anthropometric tests a generation ago were directed toward static and anatomical items

4 The statistical and clinical approaches serve distinct purposes

¹² Rufenberick, R. H. A Comparison of Physical Fitness Ratings as Determined by the Pulse-Ratio Test and Roger's Test of Physical Fitness *Research Quarterly*, March, 1942, p. 95

¹³ The Medical Department of the United States Army in the World War, vol. xv, Statistics, Part I, Anthropology, pp. 186-188

5 Health is not subject, as yet, to statistical analysis and description

6 In the selection of instruments of research, validity, reliability, and objectivity are important

7 A valid instrument may be used incorrectly

8 Sound data may be misinterpreted

9 Results discovered may not be used

10 Anything which exists, is in some amount and is therefore measureable

11 Measurement is essential to growth in educational method

12 The measurement of fitness is impossible at the present time although the fit and the unfit can be selected

13 There are numerous tests of classification for physical activity

QUESTIONS

1 Why has measurement been given a new purpose? What are the shortages of the old view?

2. How may the football coach be judged? Why is this faulty?

3 How can tests be used to increase interest? What is an achievement level, record, and graph?

4 What is the function of anthropometry today?

5 How could measurement of tennis skills interfere with tennis as a game?

6 What is the statistical approach to a problem of athletic performance? A clinical approach to the same? What are the advantages and disadvantages of each?

7 Why does the medical clinician prefer to use the term negative?

8 What qualities other than motor skills may affect athletic performance?

9 What is the criterion of validity? Reliability? Objectivity? Why are these criteria important in selecting an instrument of research?

10 How does a scale differ from a test?

11 Why is the dynamometer not a valid instrument for measuring intelligence, beauty, or health?

12 Why is logic important in interpreting results?

13 Why is quantity more readily measured than quality? The concrete easier than the abstract?

14. What are the differences in the problem of measurement as shown by the following measurement of the effectiveness of a health service using the criterion—number of remediable defects corrected, and measurement of the extent of community co-operation in a health program?

15. What is fitness? What are its large components?

16. Why is fitness specific?

17. Why is fitness difficult to measure? What is possible in this area?

18. What are some common tests of classification for physical activity?

19. What are some common tests of athletic ability?

REFERENCE READINGS

1. Bovard, J. F. and Cozens, F. W. *Tests and Measurements in Physical Education* W. B. Saunders Co., Philadelphia, 1938

2. Brace, D. K. *Measuring Motor Ability* A. S. Barnes and Co., New York, 1927

3. Cozens, F. W., Cubberley, H. J. and Neilson, N. P. *Achievement Scales in Physical Education Activities for Secondary School Girls and College Women* A. S. Barnes and Co., New York, 1937

4. Cureton, T. K. *How to Teach Swimming and Diving* Association Press, New York, 1934

5. Cureton, T. K. *The Teaching and Practice of Intermediate Aquatics* Springfield College, 1935

6. Dyer, J. T. *The Backboard Test of Tennis Ability* *Research Quarterly*, March, 1935

7. Glasgow, R. and Broer, M. R. *Measuring Achievement in Physical Education* W. B. Saunders Co., Philadelphia, 1938

8. McCloy, C. H. *The Measurement of Athletic Power* A. S. Barnes and Co., New York, 1932

9. Young, G. and Moser, H. *A Short Battery of Tests to Measure Playing Ability in Women's Basketball* *Research Quarterly*, May, 1934

STANDARDS FOR JUDGING PHYSICAL EDUCATION PRACTICE

“We make a ridiculous fetish of health nowadays. Let us, therefore, give play, recreation, and the other popular arts their proper place beside the fine arts, and avoid the common error which degrades play to a medical instrument ”—Cabot

CHAPTER XIV

Standards for Judging Physical Education Practice

Standards by Which We Judge.—Physical education practice may be considered,¹ to include all the motor activities, newly devised or accepted as traditional procedure, for motor training, health, character, and recreation of boys and girls.

Such inclusion considers everything which has belonged to, or is now a part of, or is only proposed for physical education programs. The utility of standards for judging physical education practice resides in the help to be given in the selection of activities, in the supervision of activities in progress, and in the reorganization of plans for more rational programs.

Historically, physical education has developed without standards except those of a political or militaristic necessity. The experiences of European nations in this regard have never been clear sanctions for us in America, and yet too frequently the materials of their physical education have been accepted at their face value without any calculation for exchange that is as surely variable in the realm of national needs, national traits, and national goals as it is in the realm of finance. It is of tremendous importance therefore that we set up standards for judging physical education practice, and, in doing so, that we consider the nature of man, his biologic needs, and the national needs, traits, and purposes of the American people. Man's nature and biologic needs may be very much alike in Europe and in America, but how this nature is trained and how these needs may be satisfied are dependent upon a political and moral philosophy which differs among the several nations of Europe and again in Japan, China, and other countries. Distinct from all these is the condition in the United States of America. Failure to recognize the nationalistic character of many past expressions of physical education, to-

¹ The standards of this chapter were presented first in an address before the National Convention, American Physical Education Association, April, 1923.

gether with the essential political and militaristic character of most of them (Greece excepted), is one of the conspicuous mistakes in physical education in this country. The recent experiences in Italy, Germany, Russia, and England comprise instructive examples of nationalistic programs.

Any attempt therefore to set up criteria by which physical education practice is to be judged must consider the nature of man, man's biologic needs in relation to national needs, national traits, and national goals or purposes. The discussion of the following standards is guided by such considerations. Their acceptance or rejection must be, so it seems, upon the above premises.

I The first standard proposed is *The practice must provide physiological results, scientifically determined, indicative of wholesome, functional activity of organic systems, and sufficient for the needs of the growing organism.*

Because of the nature of man and his biologic needs we are keenly interested in the organic systems. These systems—particularly the circulatory, respiratory, excretory, and nervous—are vitally related to the muscles of locomotion and the fundamental muscles of the trunk, which of course in the flat worm were the locomotor mechanism.

This standard is justified, therefore, by this dependency of the vital organs upon the fundamental muscles. This relationship and its significance have been variously appreciated in physical education. While accepting the fact, its interpretation has frequently been confused in the practical working out of methods and procedures. The discussion of breathing exercises in Chapter III illustrates the point.

Breathing exercises have been mentioned as an illustration of the need to test our practice by a standard which expresses wholesome functional activity of organic systems in the light of physiological results. Scientific evidence is available for most of the determinations of procedure in this respect. The more deplorable is the position, therefore, of those leaders of physical education in state and city who continue traditional practice when the evidence is available to correct their procedure. It is not a matter at all of recommendations of different systems of gymnastics. There can be no such thing as nationalistic forms of truth. There is truth! Scientifically determined fact! If our traditions, our beloved customs,

our cherished beliefs disagree with ascertained truth there is only one defensible position for the rational person

Unfortunately we do not have all the data which we require to apply this standard everywhere. All the needs of the growing organism are not known. Hetherington has indicated what is the time requirement of children in big muscle activities from one to twenty years. This kind of study needs to be continued and additional data collected. Moreover we need correlated studies on the relation of functional tests of physical vigor with the more static determinations of nutrition and growth. Some work has been done and other studies are in process of preparation.

Finally, it should be pointed out that any program that fails to provide for physiologic activity of the organic systems sufficient for biologic needs is to be criticized. An experiment² with fourth grade children with respect to two different programs has given preliminary technics and procedures. It showed that one type of program was not so useful for biologic growth and development as another. Such experimentation needs to be quite generally done. No matter how desirable the program may be in developing other values, it must never be forgotten that the accomplishment of physiologic work is not to be sacrificed to other goals, except in unusual emergencies.

II The second standard proposed is *The practice must have meaning and significance for the individual and should provide a carry-over interest*.³

It has been a traditional view that physical education dealt with muscles, bones, and ligaments. Our professional students have generally been more extensively trained in anatomy and kinesiology than in physiology and psychology. We have too frequently dissected the human individual and dealt with him in isolated systems and in separate parts. We have taken a position in our field similar to one sometimes held in general educational theory, namely, that the school trained the mind. It has been declared that physical education trained the body. Such positions

² Williams, J. F. A Formal Gymnastic *versus* A Play-game Program, *Teachers College Record*, September, 1922.

³ In rating this standard some experts have been disturbed because of the two parts. The author recognizes the two parts but here he interprets the two as one functioning whole—a physical education that is dynamic, full of meaning, a part of one's interests, and therefore functioning.

cannot be defended. The mass of experimental and clinical evidence accumulating in recent years on this point emphasizes the essential unity of man. Mind and body are one. It is entirely unjustifiable to speak or act with reference to any duality in the education of the human individual.

The practice, therefore, of providing exercises without reference to their meaning to the individual, without recognition of the necessity for an intelligent human being to react toward movements made, is a serious mistake. Thus we shall view with some suspicion the application of terms to exercises if this fundamental view does not prevail. For example, it has been quite popular to classify as "hygienic exercises" certain movements of the trunk that were designed to promote hepatic circulation and intestinal peristalsis. This view is focused on that part of the individual below the diaphragm. Irrespective of the effects of such movements on the abdominal organs, it is a misuse of language and a handicap to correct thinking and planning to call them hygienic unless there are health-producing effects upon the organism as a whole. It is indefensible to speak of hygienic effects upon the circulatory system and neglect the nervous system. If the individual while doing such exercises experiences unwholesome (for our purposes) effects in mind, such as dissatisfaction, depression of spirit, dislike, the very opposites of wholesome neural activity, *e. g.*, joy, happiness, pleasure, then irrespective of salutary hepatic effects, the exercise cannot be called hygienic.

Spencer knew this truth years ago and expressed it as follows:

"Granting, as we do, that formal exercises are better than nothing—and granting, further, that they may be used with advantage as supplementary aids, we yet contend that such formal exercises can never supply the place of the exercises prompted by nature. For girls as well as boys, the sportive activities to which the instincts impel are essential to bodily welfare. The common assumption that so long as the amount of bodily action is the same, it matters not whether it be pleasurable or otherwise, is a grave mistake."

The importance of recognizing that practice must have meaning and significance is attested to by our leading psychologists. Thus James emphasized the need to insure that every sensory

stimulus shall result in a muscular or motor response suited to the emergency, and moreover that the response is not complete until the kinesthetic impulses from the movement return to the brain informing as it were the antecedent sensory impulses of the completion of the act. The essential unity of mind and body demand that movement be viewed in the light of its meaning and significance to the child. The importance of satisfaction in the learning of movements bears on this point and is stated by Thorndike in the Law of Effect. Nowhere in physical education is there greater need for recognition of the demands of the individual than activities have meaning. It is being recognized in the teaching of school subjects where the psychological has supplanted the logical method in teaching spelling, reading, history, and other subjects. Its application to physical education is an immediate need.

Before our practice will have meaning and significance we shall have to get rid of a number of concepts of illegitimate origin.

For example, the development of general qualities, such as co-ordination, orderliness, subordination, grace, etc. The teacher who teaches children to perform left arm upward and right arm sideward stretching with the idea of developing co-ordination, or a waltz series or ballet technique with the aim of developing grace is simply making it difficult for scientific people to take physical education seriously. We need to recall Sherrington's words "Hence the training for a new skilled motor maneuver must be simply *ad hoc* and is of itself no training for another motor co-ordination—apart from the well-known mutual influence of training on symmetrical parts of the body." If the activities are well chosen, if they have meaning and significance, their practice will result often in co-ordination, grace, and other values as by-products of the activity which in itself was satisfying to the individual.

Moreover, if meaning and significance reside in the activity there will likely be a carry-over interest. The spectacle of men and women who have no love for and no skill in physical activity is made ridiculous by the claims of special exercises made palatable by phonograph attachment. This need for activity that shall function in the life of the individual has been forcibly stated by Fauver and Snedden. Most of us recognize the validity of their contentions.

III The third standard proposed is *The practice must provide opportunity for the individual to satisfy those socially desirable urges and impulses of nature through engagement in motor activities appropriate to age, sex, condition, and stage of development*

The need for development of the neuromuscular mechanisms arises out of the ordinary physical acts of life, the leisure time physical recreation of adults, and the joys and satisfactions that come from physical activities well performed. The ability to pick up objects from the floor, to board a train or street car, to walk, to carry suitcases and parcels, to stand, to run at times, to jump occasionally, and many other related activities depend upon skill, strength, and endurance in neuromuscular groups. For leisure time enjoyment of physical activity there must be enough skill to rank one above the novice, enough strength and endurance to secure the benefits of moderate participation. Joys and satisfactions of real merit to the individual may ensue from activities well executed. The thrill that comes from a finely conceived and well executed approach shot, the exhilaration of a dive in good form, the exultation in good woodsmanship, in sound horsemanship, in successfully poling or paddling a canoe through rapids, are types of satisfaction of real worth in the inner life, at least, of the participant. For some persons these values will be nonexistent for the same reason that precludes their enjoyment of a Sisler, Pavlowa, Tilden, or Grange. Visiles do not understand what motiles talk about, there is no common ground.

Closely related to this third standard is the necessity for excellence in performance that shall carry the individual above the dub or novice class. Continuance of an activity is related to the skill with which it is carried on. We enjoy doing things we do well. The purpose to teach activities that shall carry on in the life of the person fails unless some proficiency is achieved. Participation depends upon attaining a standard of excellence in performance. No mere perspiration standard will suffice! Exercise alone is not enough!

But neuromuscular development is not an end in itself. It is of value and significance only as it contributes to the life of the person. An omnibus driver would not find it worth while to cultivate a high degree of open-field running. These things can easily be overdone. It is important to determine, so far as possible, how

much and what kinds of neuromuscular control shall be taught and acquired

Obviously the first consideration would be the daily physical activities. Walking, climbing, standing, carrying, and perhaps running represent a minimum list. Enough skill, strength, and endurance so that these activities may go on easily. More definite statements are offered in the chapter on Objectives. In addition to these utilitarian controls one should acquire facility with at least two leisure-time physical activities. To be able to hike easily and with satisfaction, to play golf, tennis, handball, to swim, to paddle a canoe or row a boat, to skate, these are some of the many admirable forms that will always appeal. It would seem reasonable to expect that one have skills and strength for unusual occurrences. To climb down a rope, to climb a tree, to vault a fence, to jump a brook, to lift a heavy timber—these are items of safety education, in addition to other values.

It is true that one may develop the neuromuscular mechanisms beyond any reasonable use, except for exhibitivè, vaudeville performances. Thus, juggling, ballet dancing, advanced heavy apparatus, represent extremes. Marathon racing, cross-channel swimming, long-distance dancing are stunt activities without other than commercial or advertising value. For the average professional, business, or industrial worker, moderate excellence in control of the neuromuscular mechanisms will provide all that is essential.

IV The fourth standard proposed is *The practice must offer opportunity to the individual under wise leadership to meet educative situations as one of a social group*.

Most of the difficulties which we meet as human individuals are related to persons and not to things. We adjust more readily to environmental changes which are foreign to our nature than we do to personal incompatibilities. Ability to live well as a member of organized society is one of the most valuable qualities. Hence the training in moral and social attitudes is a very important business of the home and school. All the values in civilization are dependent upon the process of nurture by which the original nature of man is modified. Such training, however, must recognize fundamental points of view, and while physical education must concern itself vitally with the problem of character development it cannot proceed successfully without clear recognition of the problem.

It is helpful to remember that the more we work with children, the more we learn that we cannot with absolute assurance teach them anything. The best we can do is to offer a desirable situation and to help them to make a response that will be satisfying or annoying to them in accordance with our plan for the formation of bonds.

Aside from the need for physiological activity for the whole child, for situations which are mentally stimulating and satisfying, for the exercise of socially desirable urges, the individual we are training fails unless he takes his place in the life of the nation as a national asset. Physical education has this responsibility for the quality of our citizenship in precisely the same way that it exists for the school in general, but it has it in greater degree than any other department of the school because of the nature of the activities of the physical education program.

What will wise leadership offer? What are the criteria that will guide that leadership?

To meet educative situations as one of a social group may serve adequately as a standard because it asks us to view our program and practice in the light of social and national needs. It bids us recognize that physical education is worthy precisely to the degree in which it helps educate boys and girls who are national assets as citizens of these United States of America. Whatever may be our individual concepts of the elements of good citizenship we will doubtless agree that health, strength, vigor, power are never ends in themselves, but only useful means for the realization of service to the world. The notion that the immediate objectives of physical education are to be judged by their relation to general social ends and needs is not simply *ad hominem*, but the inescapable logic of a human world. This point needs further development.

Suppose that we were to judge physical education by the standard of its offering in educative situations and should interpret its practice in the light of character criteria. What would we think of the contribution of physical education to the idea of personal attainment? How much of our physical education is just plain exercise, without spirit, without attitudes which inspire boys and girls to live finely? How often do we see physical education morally fervid enough to portray Hall's views when he said, "Physical Education is for the sake of mental and moral culture

and not an end in itself? It is to make the intellect, feelings, and will more vigorous, sane, supple, and resourceful," or spiritually-minded enough to reflect Plato's words of "Body for the sake of Soul." Are there instances where physical education is developing the "coarse, crude, vulgar, self-seeking individual"? How far is physical education offering an opportunity in the gymnasium and on the athletic field for the development of the best in spirit, in personality, in character? This emphasis upon character qualities should not be interpreted as an advocacy of a pale and pallid type of physical education. Physical education aims to reflect life, the best life, and surely a vigorous life. It favors competition and is interested in personal achievement.

Moreover, shall physical education be concerned with equality of opportunity? What do we think of a few athletes monopolizing the gymnasium or athletic field? What do we think about sharing facilities equally between boys and girls? Equality of opportunity if it means anything at all means precisely for us that play, games, sports, and athletics shall not be the inheritance of a chosen few.

Shall our physical education be free from class privilege? What do we think of educational policy which hires expert, competent teachers for an athletic few, and limits the instruction of ninety per cent of the school population to a few exercises given by the classroom teacher?

In addition, we ought to be interested to observe to what extent physical education practice offers educative situations which shall stimulate each pupil to achieve and shall give opportunity to share responsibility. The personal qualities valued in human character can only be developed in connection with opportunities offered. Else there is no growth, no accomplishment.

Finally the individual is to be tested by his ability, his intelligence, his character, and his ambition. There must be no illusion in the word equality. That hallowed thought "all men are born free and equal" must not be misinterpreted to mean biologic equality. The assertion, "I'm just as good as you are," has to be recast to say, "I'm just as good as I become." Equality can never be inherited, conferred by grant, or made real by proclamation. It is always won. It is never a gift but always a conquest! The challenge coming down the centuries is a call to battle, to performance, to accomplishment. Fortunately the most acceptable

activities of physical education lend themselves peculiarly to the establishment of such fundamental ideas in the minds of our boys and girls

To provide opportunity for wholesome activity of organic systems, to offer a practice full of meaning and significance, to utilize the native urges and impulses in developing neuromuscular skills, to present educative situations for the individual to respond to as one of a social group—these need never mean neglect of health and motor training values so frequently sought. If the supervision is adequate, if the opportunities are hygienic and sufficient, these nearer goals will be won, and if the above or similar standards prevail, in actual programs, physical education will help in developing not only muscles, not only lungs, not only hearts, but in truth, individuals of a free and socially minded nation, ready to serve because of health, strength, and power, willing to serve because of the social consciousness that is theirs.

Evaluation of the Standards.—The four standards⁴ were proposed in 1923. Three years later, in 1926, they were submitted to 48 experts of physical education for evaluation. They were asked to score each standard from 0 to 100 with respect to the worth or competency of the standard for judging physical education practice. In other words the experts were requested to indicate how important it is to judge physical education by its ability to produce physiological results, to carry over, to satisfy inner drives, and to socialize persons. No one activity usually provides functional response in all four areas, and yet it is desirable to have some standards by which the whole range of the program may be judged.

Moreover, one never knows how well a proposed standard is accepted until it is submitted to one's peers. It may be called a standard but until there is responsible judgment of its worth, it remains a mere flag out in front of the parade or trailing ingloriously behind the procession.

After their evaluation in 1926, a second rating was secured in 1938 from 75 experts and again in 1942 from 50 experts. The experts were selected from a list of members of the American Association for Health, Physical Education, and Recreation. This was a subjective judgment of expertness. I believe that I could

⁴ The four standards are essentially the same in this edition as presented in the original article, their discussion has been changed somewhat.

judge expertness better than an arbitrary selection based on degrees held, positions attained, or experience rank might determine. I recognize, however, the limitations which should be placed usually upon subjective judgments. The rating of the four standards is given in Table XVI.

It will be observed that the scores fall heavily to the high or 100 per cent side. The actual evaluation scores for each standard are shown and, since the number of experts selected in the three periods varied, the percentage of those rating a standard as worth 100 per cent is indicated in the last column.

Study of the data will reveal the fact that Standard I receives the most high scores, meaning that there is greater agreement regarding this standard and its worth than the others. This is true for the three periods. There is less general agreement upon Standard II and the range is greater than in any of the others, while Standard III is perhaps the most constant although scoring not so high as Standard I. Standard IV is distinctly lower in approval by the experts than in other years.

It is difficult to account for all the differences in degree of approval manifested by the experts. For example, how shall we interpret the high agreement upon Standard I and the variable judgment upon Standard II? Some experts were confused in judging Standard II because, as phrased, it has two parts, but, of course, an activity must have meaning and significance if it is to carry over. One may interpret *carry over* to mean that skills learned in the elementary school must function in adult years. Such gaps are unical. The problem is to organize experiences which have meaning and significance, which will be vital to the individual at the time, and which teach him to do and desire to do that which he is now experiencing. By building an interest and developing skills in movement through satisfying experiences the individual learns continually to engage in activity. In this kind of physical education, there is no gap between childhood and adult life. The process is continuous.

In 1926 (Table XVI), nineteen of the 48 experts (39 per cent) gave an evaluation of 100 to all four standards, in 1938, thirty-seven of the 75 experts (49.3 per cent) valued all four as wholly competent, and in 1942, twenty-five of the 50 experts (50 per cent) gave a score of 100 to all four standards. This is a very high

TABLE XVI

PERCENTAGE WORTH OF EACH STANDARD ACCORDING TO JUDGMENTS OF EXPERTS—1926, 1938, 1942

	Year	10	20	30	40	50	60	70	80	90	100	Total	Percentage of experts rating each standard	
													100%	80% or better
Standard I	1926									2	3	43	88 3	100 0
	1938				1	1		1	4	6	62	75	82 6	96 0
	1942						1	1	1	4	43	50	86 0	96 0
Standard II	1926						2	2	2	6	32	45	71 1	88 8
	1938						1	1	5	2	66	75	88 0	97 3
	1942				1		1	5	4	7	32	50	64 0	86 0
Standard III	1926		1					2	4	6	27	40	67 5	92 5
	1938*		1	1		7	1	2	8	9	45	74	60 8	83 8
	1942						1	1	6	9	38	50	66 0	96 0
Standard IV	1926			1		1		3	1	5	31	42	73 8	88 0
	1938		.				2	2	7	8	56	75	74 6	94 6
	1942						1	4	4	10	31	50	62 0	90 0

* One rating gave this standard a zero score

agreement and indicates over a period of sixteen years some growth in general acceptance

Individuals vary greatly in their use of a perfect score. A more accurate picture of the agreement existing is shown, perhaps, in the last column of Table XVI. In this column the percentage of experts scoring each standard as worth 80 or better is given. For most persons a score of 80 is *good* and this word, if applied to each standard, might mean that from 83.8 per cent to 97.3 per cent of experts regard these as good standards, and that 100 per cent regard Standard I as good. This analysis and assignment of the value *good* is speculative.

Summary.—The standards presented suggest.

1 Many traditional practices of physical education are unphysiologic. They arose as empirical practices. Later scientific experimentation has revealed the correct procedure.

2 Physiologic results, scientifically rather than traditionally determined, should be sought. These results should point toward the development of organic systems.

3 Development of organic systems should take place in relation to individual needs. Greatest development of heart, lungs, or other viscera is not desirable.

4 We learn best in situations which provide an interest, which have meaning or significance, which favor a satisfying response.

5 To react to situations which have meaning and significance, then, is to grow in relation to that thing provided in the situations.

6 Such growth is the only insurance of a carry-over interest. Since the great end is continued participation in worthwhile activities, this growth is vital.

7 The growth of the individual in relation to skills and practices which become a part of his life is immeasurably more valuable than any number of esoteric co-ordinations which have no relation to life's experiences.

8 The differences between people who are physically educated and those who are physically illiterate are perfectly obvious. Physical illiteracy is inefficient in the numerous motor acts of daily life, and represents wasted energy, awkwardness, and even strain.

9 To be physically educated adds to the joys and satisfactions of life in a wholesome way.

10 The goal of physical education is responsible character. Cultivation of the body for its own sake is always a mistake. If the purpose of life is to function, physical education interprets its part in this plan in harmony with the goal of education in general

QUESTIONS

1 Why has physical education in Europe grown out of the political and social standards of the time and place? What influence has such forces in our American scene today?

2 Why should there be a standard for judging an exercise?

3. Why should our experiences have meaning? Are they usually without it? Explain.

4 What are general qualities? Do we readily generalize? What is specific learning?

5 How would you describe an educated person? Would you include hand skills, manners, and emotional control? Why?

6. Why are physical skills regarded as less valuable than mental skills?

7 Is there social value in skill developed beyond the level of individual enjoyment and personal use? Explain

8 What responsibility have teachers of physical education for citizenship training? For love of country? For appreciation of beauty? For courtesy and kindness?

9 What is the meaning of democracy on the athletic field? Illustrate

10 How would you score each one of the four standards? Justify your rating

REFERENCE READINGS

- 1 Briggs, T H Improving Instruction. The Macmillan Co, New York, 1938
- 2 Cassidy, R New Directions in Physical Education for the Adolescent Girl. A S Barnes and Co, New York, 1938
- 3 Lee, M The Conduct of Physical Education A S Barnes and Co., New York, 1937
- 4 Reeves, C E Standards for High School Teaching D Appleton-Century Co, New York, 1932
- 5 Symonds, P M Diagnosing Personality and Conduct D Appleton-Century Co, New York, 1931
- 6 Valentine, P E The Art of the Teacher D Appleton-Century Co, New York, 1931

INDEX

- ABDOMINAL viscera, muscles of, 73
 Abelard, 150
 Absurd interpretations of competitive behavior, 145
 Academic mind, 217
 Accomplishment levels, 328
 Action, preparation by nature for, 211
 Activities, distribution of, by age periods, 60
 personal combat, objectives in, 268
 physical, classification for, 71
 racial, analysis of, 62
 running, preference for, 63
 self-testing, objectives in, 268
 Activity and growth, 321
 interest in, 323, 327
 Adams, II, 279
 Adams, J. T., 130
 Adolescent, developmental hazards, 88
 Adult and child, spine of, differences in, 67
 and infant, chest circumferences, 67
 skeleton, difference between, 65
 Adults, diseases in, prevalence, 44
 Aesthetic objectives of dance, 266
 Agassiz, 192
 Age, chronological, anatomical, and physiological, 70
 each, its own values, 150
 periods, distribution of activities by, 60
 Aims of physical education, 247, 250
 relationships, 248
 Ailms and fitness, 195
 Alvarez, W. C., 36
 America, modern, program of physical education for, 281
 American Association for Health, Physical Education and Recreation, ten cardinal points in platform, 248
 American culture, contemporary, aspects of, 121
 American culture, contemporary, competition and co-operation, 140
 democracy and government, 134
 laissez faire and, 140
 work, wealth, and morals, 128
 life, rhythm in, 207
 physical education, history of, 180
 recent trends in, 183
 practicability, 207
 Amoros, 151
 Amplitude and voluntary movement, norms for, 75
 in male college students, 76
 Anatomical age, 70
 characteristics, measures to determine, 346
 Anatomy, role of, 72
 Anger, habits and, 97
 Annoyance, 98
 Anthropometry, 346
 Apparatus stunts, objectives in, 268
 Application of concept of unity, 127
 Aquatics in program of physical education, 234
 objectives in, 268
 Arch of child's foot, 67
 Area of school site, 282
 considerations determining standards, 283
 for elementary school, 283, 284
 for high school, 285
 for intermediate school, 283
 Aristotle, 122, 150, 245
 Armbruster, D. A., 277
 Arndt and Fichte, 170
 Art and teaching, science in, 315
 Asceticism, 121
 Associated learnings, 318
 methods in, 323
 Asthenic, 71
 Athletic heart, 74
 type, 71

- Athletics in program of physical education, 294
 objectives in, 263
 Attitudes, 334
 in concomitant learning, 337
 Authority, break with, 208
 Avanguardiaisti, 176
 Averill, L. A., 341
 Awareness of objectives, as learning aid, 329

 BACK-TO-THE-BODY aim, fallacy of, 253
 philosophy and, 255
 physiology and, 254
 psychology and, 254
 Bacon, 2, 392
 Bahlla, 176
 Barrie, 132
 Barringer, T. B., 354
 Bascow, 161
 Beauty, 351
 Beck, 180
 Beecher, C., 180, 181
 Behavior, 118
 and calamities, 119
 and past experience, 109
 competitive, absurd interpretations of, 145
 disturbances in, 209
 fear and, 119
 habits and, 97
 organized and complete, 101
 Beliefs, faulty, examples of, 9
 Biological and social inheritance, combined, 147
 basis of life, 57
 facts applied to physical education, 59
 foundations of man, 53
 inheritance, 211
 weakness, evidences of man's, 26
 Biped position, 60
 solution of the problem of, 62
 Birth of physical education, 150
 Blanchard, V. S. and Collins, L. A., 242
 Blindness in intellectuals, 231
 Blood, circulation of, 73
 Bode, B. H., 113, 123, 157
 Bode, G., 97, 98
 Body and mind, relation between, 91, 121-127, 254
 Greeks and, 122
 neglect of, 121
 types, 71
 Bovard, J. F. and Cozens, F. W., 357
 Bowden, A. O. and Melbo, J. R., 113
 Boyd, W. and Ogilvie, W., 157
 Bracc, D. K., 357
 Branle, 153
 Branting, 173
 gymnastics, Sweden, 173
 Break with authority, 208
 Breathing exercises, 77
 Brierley, 245
 Briggs, T. H., 18, 374
 Broad interests, physical education and, 130
 Broer, M. R. and Glassow, R., 357
 Brownell, C. L., 350, 351
 Brownell, W. C., 187
 Browning, 261
 Bruce, W., 18
 Buildings in physical education plant, 289
 Bukh, N., 173
 Buidick, 59
 Burpee, R. H., 354
 Butler, 300, 313
 Butler, N. M., 135

 CANNOT, 359
 Cabot, R. C., 130
 Calamities, behavior and, 119
 Calisthenics, rôle of, 182, 189
 Camp activities in program of physical education, 238
 Camping, objectives in, 268
 Cancer, increase in, significance, 40
 Cannon, W. B., 113
 Carbon dioxide, normal amount, needed stimulus, 77
 hemoglobin and, 77
 Carlson, H., 86
 Carpentier, 175
 Carrying, objectives of, 275

- Casey, D., 310
 Cassidy, R., 178, 213, 371
 Causes for rejection for military service, 28
 urban and rural groups, 42, 43
 Cell needs and oxygen supply, 77
 Centralization of power, 220
 Challman, R. C., Gates, A. I., Jersald, A. T. and McConnell, T. R., 99, 101, 105
 Chamberlain, L. M., 311
 Chambers, M. M., 227
 Changing world, needs of society in, 47
 Character, 333
 education, 333, 334
 Chase, D. H. and Symonds, P. M., 110
 Chenoweth, L. B., 92
 Child, C. M., 113
 Child and adult, spine of, differences in, 67
 fatigue, weekly hours class-work and, 82
 foot of, arch of, 87
 from six to ten years of age, developmental hazards, 81
 from ten to fourteen years of age, developmental hazards, 82
 play life of, 15
 pre-school, developmental hazards, 80
 recreational life of, 45
 age and sex preferences, 63, 64, 65
 time-study, 61
 type activity, 63, 64, 65
 school, defects in, per cent, 30
 defects in, significance, 29
 White House Conference on, 20
 time-study, 61
 Child-bearing, endurance of women in, 37
 Children and women in industry, 200
 Chronological age, 70
 Chumak, 152
 Circulation of blood, 73
 Civilized society, degeneration in, 24
 Germany and, 25
 modern war and, 25
 Clark and Lewis, 37
 Clarkson, 177
 Classification for physical activity, 354
 Chas, 151
 Climbing, objectives of, 274
 Clinical approach to tests in physical education, 348
 Cluver, E. H., Jokl, E., Goedvolk, C. and DeJongh, T. W., 47
 Code of ethics, 306
 Coelenterata, 57
 Cole, L., 113
 College, indoor gymnasium for, standards, 205
 students, defects in, kinds and significance, 32, 33, 36
 male, norms for amplitude and voluntary movement, 76
 women, height of, by years, 84
 Collins, L. A. and Blanchard, V. S., 242
 Collins, S. D., 29
 Commercialization of physical education, 4
 Competition and cooperation, 140
 origin of qualities of, 143
 Competitive behavior, absurd interpretations of, 145
 Concept of dualism, 125
 of stimulus and response, in the learning process, 100
 of unity, 127
 application of, 127
 Concomitant learnings, 252, 318
 method in, 332
 Conditioned reflex, 106
 Confidence and learning, 110
 Contemporary American culture, aspects of, 121
 competition and cooperation, 140
 democracy and government, 134
 laissez faire and intercollegiate sport, 140
 work, wealth, and morals, 128
 Continuity of experience, 210
 Cooperation, competition and, 140
 nature of, 142
 origin of qualities of, 143
 Coops, H. L. and Smith, H. N., 341
 Corrective gymnasium for high schools, 203

- Cossack dance, 153
 Cottrell, B and D, 277
 Country dances of England, 152
 Counts, G H, 157
 Counts, G S, 243
 Courage, 253
 Courtesy, 253, 336, 337
 Courtis, S A, 252
 Cozens, F W, 110
 and Bovard, J F, 357
 and Nixon, E W, 243
 Cubberley, H J and Neilson, N P, 357
 Crampton, C W, 354
 Creed, P, 139
 Crime, 208
 causes of, 45
 Crosswell and McGee, 64
 Cubberley, E P, 181
 Cubberley, H J, Cozens, F W and Neilson, N P, 357
 Culture, contemporary American, aspects of, 121
 competition and cooperation, 140
 democracy and government, 134
 laissez faire and, 140
 work, wealth, and morals, 128
 Cureton, T K, 277, 357
 Curtis, H S, 284
 Custom, 117
 Customs and traits, experience in terms of, 165
 Czardas, 153
- DA FELTRE, V, 4, 151, 176
 Daldans, 153
 Dambach, J, 187
 Dance, antagonism to, 216
 in program of physical education, 235
 objectives of, 264
 aesthetic, 266
 physiological, 265
 poise, 266
 power to relax, 267
 rhythm, 265, 267
 social, 266
 social inheritance in, 152
- Dance, sword, of Scotland, 152
 Danish gymnastics, 173
 Darwin, 7
 Davenport, C B and Love, A G, 42
 Davis, E C and Lawther, J D, 341
 de Coubertin, P, 137, 174
 Defective body mechanics in university and college students, 36
 Defects, functional, of heart, 73
 in school children, per cent, 30
 significance, 29
 White House conference on, 29
 in university and college students, 32
 dental, 32
 defective body mechanics, 36
 hearing, 36
 heart and circulation, 36
 nose and throat, 36
 nutritional, 38
 vision, 33
 in urban and rural groups, 40
 of function and delinquency, 213
 spinal, of infants, 80
 Degeneration in civilized society, 24
 Germany and, 25
 modern war and, 25
 of man, machines and, 24
 DeJongh, T W, Jokl, E, Cluver, E H and Goedvolk, C, 47
 de la Palisse, M, 245
 Delinquency and function, defects of, 213
 social, physical education and, 208
 Delinquent social institutions, 212
 Delaarte, 10, 175, 179
 Democracy and government, 134
 Democratic values and physical education, 136
 Dental defects in university and college students, 32
 Desertions, by citizenship, comparison, 197
 Deuel, W R., 187
 Development and growth, 69
 Developmental changes, 65
 in arch of child's foot, 67
 in infant's and adult's skeleton, 65
 in sex, 68

- Developmental changes in spine, 67
 in pelvis, 69
 hazards, 80
 of adolescent, 88
 of child six to ten years of age, 81
 ten to fourteen years of age, 82
 of infancy, 80
 of pre-school child, 80
- Dewey, E and Glover, K, 86
- Dewey, J., 94, 98, 125, 128, 129, 137, 214, 215, 227, 248, 259
- Diehl, H. S., 33
- Diehl, H. S. and Shepard, W. P., 33, 36, 41, 50
- Director of physical education, 303
- Discipline, 253
 formal, 331, 332
- Diseases, 208
 in adults, prevalence, 41
 in primitive people, 44
- Distribution of practice periods, 109
- Distinct playgrounds for adults and young people, 283
- Diversity and unity of man, 91
- Dressing rooms for girls, 294
 for high schools, 293, 294
- Drill, importance of, 322
 in program of physical education, 239
- Drives, 92
- Dodge, R., 341
- Doing, learning from, 329
- Douglas, D. W. and Lumpkin, K. D., 227
- Douglas, P. H., Hitchcock, C. N. and Atkins, W. E., 267
- Dualism concept, 125
- Dublin, L. I., 50
- Dubois-Reymond, 151
- Duggan, A. S., 277
- Dunbar, H. J., 113
- Durant, H., 157
- Dyer, J. T., 357
- Dynamic views of man, 13
- Economic standards, interpretation of, 202
- Edmunds, W. P., 32
- Education, influence of, on human traits, 144
 physical See *Physical education*
- Educational exercises, 78
- Education of specialists, 300
- Effect, law of, 99
- Effort, theory of, 331, 332
- Einführung, 153
- Elementary schools, area of site, 283, 284
 equipment for, 287, 289
 gymnasium in, 289
 play rooms in, 289
 swimming pool in, 290
- Elhot, 130
- Elliot, R., 5, 304
- Ellis, H., 152, 153
- Emerson, 331
- Emerson, W. R. P., 33
- Emotions, fear of, 215
- Empathy, 153
- Energy-activity ratio, principle of, in fundamental skills, 270
- Engelhardt, N. L. and Strayer, G. D., 285, 290, 311
- English country dances, 152
 physical education, history of, 177
- Environment, 54, 148
 habits and, 96
 influence of, on growth, 70
- Epictetus, 159
- Equipment, changed conditions modifying, 281
 for elementary schools, 287, 289
 for high schools, 290
 correct gymnasium, 293
 dressing rooms, 293, 294
 examination room, 293
 game rooms, 293
 showers, 294
 swimming pool, 294
 objectives in, 281
 principles and program and, relation, 281
- Equitation in program of physical education, 234
 objectives in, 263, 264
- Errors, common, in measurement, 349
- Eternal principles, 9

- Ethics, code of, 306
 professional, 306
 Ever-present risk, 14
 Evidence of man's biological weakness,
 20
 of relationships, 122
 Evil nature, 208
 Excuses, 335
 Exercises, breathing, 77
 hygiene, 864
 organic vitality developed by, 320
 Experience, 96
 continuity of, 210
 evaluation of, in terms of results, 164
 foreign, in physical education, influ-
 ence of, 161
 in terms of traits and customs, 165
 of others, influence of, 161
 past, behavior and, 109
 psychic factors in, 164
 reliability of, as guide, 162

 FACTORY system, development of, 190
 Facts of nature, importance of, 55
 Faddists, 4
 Fair dealing, 253
 play, 138, 139
 Falk, I S, 31
 Fallacy of the back-to-the-body aim, 253
 philosophy and, 255
 physiology and, 254
 psychology and, 254
 Fashion, change in, relation of, to height
 and periodic disability of women, 35
 Fatigue, child, weekly hours of class-
 work in relation to, 82
 Faulty beliefs, examples of, 9
 instruments in measurement, 350
 Fauver and Snedden, 365
 Fear, behavior and, 119
 of emotions, 215
 of play, 132, 213
 Federal government and recreation, 221
 and the schools, 222
 Feet, defective, of infants, 81
 Feldman, 74
 Female and male, sex differences in, 68

 French physical education, history of,
 173
 Fichte and Arndt, 170
 Fields in physical education plant, 280
 Fishing, objectives in, 268
 Fitness, 353
 measurement of, 353
 physical, alien and native, 195
 tests, 354
 Flatworms, 57
 Flip, 152
 Folk Festival Council of New York, 153
 Follen, 180
 Food, influence of, on growth, 70
 Foot and its uses, 72
 of child, arch of, 67
 Forces, economic, and physical educa-
 tion, 193
 social, and physical education, 263
 antagonistic to physical education,
 213
 Formal discipline, 331, 332
 gymnastics, 330
 Formality in method, 331
 Forsythe, W E, 32
 Foster, W L, 354
 Fox, 177
 Frank, L K, 227
 Frenssen, G, 317
 Freud, 92
 Fries, C C and Mann, M, 277
 Frisch, frei, froehlich, fromm, 168
 Function and delinquency, defects of,
 213
 Functional defects of heart, 73
 Functions, measurement of, 354
 Fundamental skills in program of phys-
 ical education, 296
 objectives in, 200 See also *Objec-*
 tives in fundamental skills.
 to accessory, 79
 Furst, 52

 GAMES in program of physical educa-
 tion, 234
 objectives in, 263
 Olympic, 154

- Games, rooms for high schools, 293
 social inheritance in, 163
 space requirement, 286, 288
- Galsworthy, J., 166, 229
- Gates, A. I., 99, 104, 105
 Jersild, A. T., McConnell, T. R. and
 Challman, R. C., 99, 104, 105
- Gelandesport, 171
- Generosity, 253
- German physical education, history of,
 167
- Germany and a degenerate generation,
 25
- Gestalt psychology, 100, 101
 view, 100, 332
- Gilliland, 73
- Giovani Ilahane, 176
- Girls, dressing rooms for, 294
- Glasgow, R. and Broer, M. R., 357
- Glover, K., 227
 and Dewey, E., 86
- Goedvolk, C., Jold, E., Cluver, E. H. and
 DeJongh, T. W., 47
- Goodness, 351
- Government and democracy, 134
 federal, and recreation, 221
 and the schools, 222
- Grange, 366
- Graphic portrayal of learning, 99
- Gray, 74
- Greeks and body, 122
- Gregariousness, 137
- Griffith, C. R., 113
- Grosz, E., 153
- Groups, urban and rural, defects in, 40
- Growth, activity and, 321
 and development, 69
 and shifts in population, 193
 factors influencing, 69
 influence of environment on, 70
 of food on, 70
 of heredity on, 69
- Guntry, 336
- Gymnasium, 289
 corrective, for high school, 293
 in elementary schools, 289
 in high school, 290
 indoor, for colleges, standards for, 295
- Gymnastics, in program of physical edu-
 cation, 238
- Gymnastics, individual, 232
 individual, as corrective of postural
 defects, 263
 as preventive of postural defects,
 262
 objectives of, 262
 mental, 251
- HABITS, 96
 anger and, 97
 behavior and, 97
 environment and, 96
- Haldane, J. B. S., 86, 113, 122
- Hale, R. W., Jr., 187
- Hall, G. S., 239, 245
- Hamilton, A., 128
- Hanging, objectives of, 274
- Hanna, 347
- Hanson, 304
- Hardenberg, 169
- Hardy, M. C. and Hoefer, C. N., 29, 87
- Harley, D. L. and Wren, C. G., 222
- Harlow, R. F., 218
- Hartman, G. W., 113
- Hartshorne, H., 341
- Hartwell, S., 227
- Hayes, C. J., 167, 169
- Hayes, C. J. H., 187
- Hazards, developmental, 80
 of adolescent, 83
 of child six to ten years of age, 81
 ten to fourteen years of age, 82
 of infancy, 80
 of modern industrial life, 21, 23
 of pre-school child, 80
- Health, normal, 349
 service, evaluation of, 362
- Hearing defects in university and college
 students, 36
- Heart and circulation, 73
 athletic, 74
 defects in university and college stu-
 dents, 36
 functional defects, 73
 irregularities in child, 82

- Heart, shape and size, 73
 size of, at different ages, 74
 Hébert, G., 175
 Hedley, O. F., 30
 Height of college women by years, 34
 Hemoglobin, carbon dioxide and, 77
 Heredity, influence of, on growth, 69
 on physique, 71
 Herrick, C. J., 91, 123, 157
 Hetherington, 363
 Hetherington, C., 59
 High school, area of site, 285
 equipment for, 290
 corrective gymnasium, 293
 dressing rooms, 293, 294
 examination room, 293
 game rooms, 293
 showers, 294
 swimming pool, 294
 gymnasium in, 290
 Hiking, objectives in, 268
 Hitchcock, 347
 Hjelte, G., 227
 Hoefer, C. N. and Hardy, M. C., 29,
 87
 Hoffman, F. L., 163
 Hogben, L. T., 33
 Holmes, S. J., 50
 Honesty, 253
 Hooton, E. A., 31, 87
 Hornpipe, English, 163
 Hospitals, 209
 Howard, G. W., 351
 Hughes, W. L., 286, 288
 Human traits, influence of education on,
 144
 Hunting, objectives in, 268
 Hurlock, E. B., 110
 Hygienic exercises, 364
- IDEAL and practical, in physical educa-
 tion, 15
 social, and programs, 204
 Ideas and traits, development of, from
 social forces, 149
 Importance of facts of nature, 55
 Impulses, 92
- Index of Quelelet, 355
 Individual gymnastics, 292
 as corrective of postural defects,
 293
 as preventive of postural defects,
 292
 objectives of, 292
 Individual, unity of, 210
 Indoor gymnasium for colleges, stand-
 ards for, 295
 Industrial life, 21, 23
 modern, hazards of, 21, 23
 shortages of, 21, 23
 Industrialization of society, physical
 education and, 199
 Industry, women and children in, 200
 Infancy, developmental hazards, 80
 Infant and adult, chest circumferences,
 67
 neurasthenia in, 80
 skeleton, differences between, 65
 Influence of education, human traits
 and, 144
 of nurture of man, 55
 Inheritance, biological, 211
 and social, combined, 147
 of traits, 56
 social, in physical education, 151
 in sports and games, 153
 Inhibition, 107
 Innervation, reciprocal, 78
 Insanity, increase in, significance, 40
 Insight, basic, 101
 Instincts and psychology, 92
 Institutions, social, delinquent, 212
 Instruments, faulty, in measurement,
 350
 Intellectuals, blindness in, 231
 Interaction principle, 118
 Intercollegiate sport, laissez-faire and,
 140
 Interest in activity, 323, 327
 Intermediate school, area of site, 283
 Interpretations, absurd, of competitive
 behavior, 145
 Isthmia, 154
 Italian physical education, history of,
 176

- JACKS, L. P., 115, 157
 Jahn, 151, 107-172, 181
 Jahn's gymnastics, Germany, 167
 Jails, 200
 James, 304
 James, W., 123, 140, 147
 Jennings, H. S., 87, 90
 Jersild, A. T., 90, 113
 Jersild, A. T., Gates, A. I., McConnell, T. R. and Challman, R. C., 90, 104, 105
 Jokl, E., Cluver, E. H., Goodvolk, C. and DeJongh, T. W., 47
 Joy of work, 120
 Judging physical education practice, standards for, 361
 evaluation of, 370
 Jugenbund, 170
 Jumping, objectives of, 274
 Justice, sense of, 138, 139
 and the social order, 138
 Juvenal, 151

 KANDEL, I. L., 187, 317
 Karpovich, P. V., 74
 Kellogg, 348
 Kilpatrick, 90
 King, B., 187
 Kiphuth, R. J. H., 277
 Komsomols, 180
 Kraft durch Freude, 171

 LABOR, machine, 200
 La Casa Giocosa, 4, 176
 Ladd, G. T. and Woodworth, R. S., 108
 LaFollette, C. T., 227
 Laidler, H. W., 291
 Laissez faire and intercollegiate sport, 140
 Lamar, E., 310
 LaPorte, W. R., 257
 Larson, L. A., 354
 LaSalle, D., 243, 277
 Lashley, K. S., 113
 Laski, H., 187
 Law of effect, 99
 of practice, Poppelreuter's, 323
 Lawrence, D., 227
 Lawther, J. D. and Davis, E. C., 341
 Leadership, world, of United States, and physical education, 201
 Leaping, objectives of, 274
 Learn by doing, 148
 Learning, associated, 318
 method in, 323
 concomitant, 318, 332
 method in, 332
 confidence and, 110
 curve, 105
 from doing, 329
 graphic portrayal of, 99
 motivated, 110
 process, 98
 laws of, 99
 part method, 102
 whole method, 102
 situation and response, 99
 promotion of, rewards and punishments in, 321
 social, of man, 118
 technical, 318
 method in, 320
 Lee, J., 145
 Lee, M., 374
 Lenglen, 175
 Leonard, 347
 Leonard, F. E. and McKenzie, R. T., 187
 Lewis, D., 181
 Lewis and Clark, 37
 Lezginka, 152
 Libido, 92
 Lieber, 180
 Life, adjustment to, problem of, historic rôle of physical education in, 161
 American, rhythm in, 207
 biological basis, 57
 primitive, and physical education, 21
 Lifting, objectives of, 275
 Lin Yutang, 98, 227
 Lindeman, E. C., 18, 141, 227
 Ling, P. H., 151, 172, 173
 Lippman, W., 144, 343
 Locker equipment, boys', 294
 girls', 295
 Logical progression, 323

- Longevity, 89
 Love, A G and Davenport, C B, 42
 Loyalty, 166, 253
 Luehring, F W, 310
 Lumpkin, K D and Douglas, D W, 227
 Lynd, R S and H M, 227
- MACCUNN, 245
 Machine labor, 200
 Machines and degeneration of man, 24
 MacIver, R M, 117, 157
 Male and female, anatomical differences in, 68
 Man, biological foundations, 53
 custom of, 117
 degeneration of, machines and, 24
 drives, 92
 impulses, 92
 natural proclivities, 55
 nature of, 53, 91
 original, 117
 obligation of physical education to, 45
 in the changing world, 47
 original proclivities, 55
 physical basis, permanence of, 56
 physically degenerate, 21
 psychological foundations, 91
 social learnings, 118
 sociological foundations, 117
 static and dynamic views, 13
 unity and diversity, 91
 urges, 92
 Mann, M and Fries, C C, 277
 Mann, T, 142
 Marraro, H R, 187
 Mason, B S and Mitchell, E D, 277
 Maturation in girls, 70
 McCloy, C H, 257, 357
 McConnell, T R, Gates, A I, Jersild, A T and Challman, R C, 99, 104, 105
 McCormick, A, 213
 McDougall, W, 19
 McGee and Crosswell, 64
 McGeoch, J A, 323
 McKay, H D and Shaw, C R, 227
- McKenzie, R T and Leonard, F E, 187
 Measurement of fitness, 353
 of functions, 354
 Measurements in physical education, 345
 changing view, 345
 common errors, 349
 principles of, 351
 selection of faulty instruments, 350
 unsound interpretation of results, 351
 Meek, L H, 113
 Melbo, I R and Bowden, A. O., 113
 Mens sana in corpore sano, 151
 Mental gymnastics, 251
 Mentally stimulating and satisfying, 251
 Meredith, H V, 87
 Mercurials, 151
 Metcalf, 304
 Method, formality in, 331
 in associated learnings, 323
 in concomitant learnings, 332
 in technical learnings, 320
 principles of, 315
 scientific, 315
 Methods, many, best one, 319
 Meylan, G L, 82
 Military service rejections, causes for, 28
 in urban and rural groups, causes of, 42, 43
 comparison of, 41
 Miller, E, 87
 Mind, 122, 148
 and body, relation between, 91, 121-127, 254
 the academic, 217
 Minot, 66
 Minuet, 153
 Mitchell, E. D., 277
 and Mason, B S, 277
 Modern America, physical education in, 231
 philosophy and unity, 125
 war and degeneration of man, 25
 Monroe, W S, 310
 Montaigne, 174
 Moore, H E and Odum, H W, 227
 Moralistic ideas, old, 214

- Morals, work, and wealth, 128
 Moser, H and Young, G, 357
 Mosher, C D, 33, 35
 Motivated learning, 110
 Motor skills, overlearning and, 109
 Muleaster, R, 151
 Mursell, J L, 110
 Muscles of abdominal viscera, 73
 of trunk, 73
 Muscular system, importance of, in human development, 57
 Muths, G, 151
- NACHTGALL, 151
 Nash, J. B., 257
 National defense and play, 133
 Natural proclivities of man, 55
 Nature of competition, 141
 of cooperation, 142
 of man, 53, 91
 original, 117
 preparation by, for action, 211
 Neglect of body, 121
 Neilson, N P and Van Hagen, W, 243
 Cozens, F W and Cubberley, H J, 357
 Nemca, 153
 Nervous system, instability of, 80
 Neurasthenia in infants, 80
 Nichols and Raubenheimer, 124
 Nietzsche, 317
 Nixon, E W and Cozens, F. W., 243
 Normal health, 349
 Norms for amplitude and voluntary movement, 75
 in male college students, 76
 Nose and throat defects in university and college students, 36
 Nurture, influence of, 55
 of man, 53
 Nutritional defects in university and college students, 33
 Nye, D, 50
- OBERTASS, 153
 Objective psychologists, 103
- Objectives in camping, 268
 in dance, 264
 aesthetic, 266
 physiological, 265
 social, 266
 in equipment and staff, 281
 in equitation, 263, 264
 in fishing, 268
 in fundamental skills, 269
 carrying, 275
 climbing, 274
 hanging, 274
 jumping, 274
 leaping, 274
 lifting, 275
 running, 273
 throwing, 274
 walking, 273
 in games, athletics, sports, aquatics, and equitation, 268
 in hiking, 268
 in hunting, 268
 in individual gymnastics, 262
 in personal combat activities, 268
 in physical education, 261
 in self-testing activities, 268
 in swimming, 263, 264
 Objectivity of tests in physical education, 350
 Odum, H W and Moore, H E, 227
 Odzemok, 152
 Ogburn, W F, 167
 Ogilvie, W and Boyd, W, 157
 Old moralistic ideas, 214
 Olympic games, 153, 154
 Opposition, principle of, in fundamental skills, 270
 Order and social control, 136
 Organic vitality developed by exercise, 320
 Orientation of physical education, 3
 Origin of qualities of competition and cooperation, 143
 Original proclivities of man, 55
 O'Shea, 63
 Outdoor facilities, utilization of, 296
 Overlearning of motor skills, 109
 Overn, A V, 341

Overstreet, H. A., 227
 Oxygen, body requirements of, 75
 supply and cellular needs, 77

PANOV, 179
 Park, recreation, 283
 Part method in learning process, 103
 Participation and proficiency, 205
 Patridge, 180
 Paterson, D., 50
 Patrick, G. T. W., 122, 123, 157
 Paull, H., 123
 Pavlova, 360
 Pearl, R., 39
 Pearson, 31
 Pelvic measurements, 68
 Pelvis, changes in, 60
 Permanence of physical basis of man, 56
 Personal combat activities, objectives
 in, 268
 Personality, 135
 Pestalozzi, 101
 Pfüger, 77
 Physical activities, classification for, 71
 tests, 354
 racial, analysis of, 62
 basis of man, permanence, 56
 culture course, 4
 education, aims, 247
 American, history of, 180
 recent trends in, 183
 an aim of, 250
 and broad interests, 180
 and democratic values, 136
 and social delinquency, 208
 applied biological facts in, 59
 as profession, 5
 attitudes in, 334
 birth of, 150
 commercialization of, 4
 culture courses, 4
 degenerative influences, 23, 24, 25
 director of, 308
 dynamic view, 13
 economic forces and, 198
 English, history of, 177
 ever-present risk, 14

Physical education, faulty beliefs, exam-
 ples of, 9
 for modern America, 231
 foreign influences, 161
 forms of, 4
 French, history of, 173
 German, history of, 167
 historic rôle of, in problem of ad-
 justment to life, 161
 history of, 3
 in America, 5
 industrial life and, 21, 23
 industrialization of society and,
 199
 influence of, upon physical welfare,
 44
 influences shaping, 191
 Italian, history of, 170
 made to serve war, 219
 measurements in, 345
 changing view, 345
 common errors, 349
 principles of, 351
 selection of faulty instruments,
 350
 unsound interpretation of results,
 351
 modern psychology and, 95
 objectives in, 261
 obligation of, to develop the whole
 man, 45
 in the changing world, 47
 essential for healthy life, 47
 plant, 289
 political influences and, 218
 practical and ideal, 15
 practice, standards for judging, 361
 evaluation of, 370
 primitive, 3
 life and, 21, 22
 principles of, adapted to period, 13
 application, 15
 method, 315
 sources and data, 3
 validity, 9
 professor of, 308
 program of, 231 See also *Program
 of physical education.*

- Physical education, purpose determined
 by ideals of period, 4
 primitive, 8
 rôle of anatomy in, 72
 of physiology in, 72
 Russian, history in, 170
 social direction of, 11
 forces and, 203
 antagonistic to, 213
 inheritance in, 151
 staff in, 281, 290
 changed conditions modifying,
 290
 principles and program and, re-
 lation, 281
 static view, 18
 Swedish, history of, 172
 systems of, imported, 12
 tests in, 345
 anthropometric, 346
 backgrounds of movement, 346
 changing view, 345
 clinical approach, 348
 failure to use results, 351
 function of, 346
 incorrect use of valid instrument,
 351
 objectivity of, 350
 reliability of, 350
 statistical approach, 348
 unsound interpretation of results,
 351
 validity of, 350
 weakness of, 352
 tragedy of too little and too late in,
 15
 world leadership and, 201
 fitness, aliens and natives, 195
 rejections, alien and native communi-
 ties, comparison, 190
 weakness, 45
 welfare, influence of physical educa-
 tion on, 44
 Physically degenerate man, 21
 educated, when, 240
 wholesome, 250
 Physiological age, 70
 maturation in girls, 70
 Physiological objectives of dance, 285
 Physiology, rôle of, 72
 Physique, 71
 influence of heredity on, 71
 Piccole, 176
 Piersol, G. A., 74
 Pignet, 355
 formula for robusticity, 355
 Pioneer spirit, 206
 Pioneers, 180
 Pitt, 177
 Platform of American Association for
 Health, Physical Education and Rec-
 reation, ten cardinal points in, 248
 Plato, 150, 245
 Play, 132, 133
 and national defense, 133
 in program of physical education, 234
 fear of, 132, 213
 life of child, 45
 time-study, 61
 lots for babies and children, 283
 of inner imitation, 153
 rooms in elementary schools, 289
 Playgrounds, district, for adults and
 young people, 283
 school, area of, 283, 284, 285
 Poise objective of dance, 268
 Political influences and physical educa-
 tion, 218
 Polstertanz, 153
 Pool, swimming, for high schools, 294
 in elementary schools, 290
 Poppelreuter's law of practice, 323
 Population of United States (1790-
 1940), 194
 urban and rural (1900-1940), 197
 shifts and growth in, 193
 swing of, to cities, 196
 Position, biped, 60
 quadruped, 60, 61
 Posture defects, individual gymnastics
 as corrective of, 263
 as preventive of, 262
 good, as objective of gymnastics, 262
 Power, centralization of, 220
 to relax objectives of dance, 267
 Practicability, American, 207

- Practical and ideal in physical education, 15
- Practice periods, distribution of, 109
Poppelreuter's law of, 323
- Pre-school child, developmental hazards, 80
- Preservation of unfit, 31
- Primitive education, 3
life, 21, 22
people, disease in, 44
- Principles based on facts, 7
definition of, 6
eternal, 9
faulty, examples of, 9
of method, 315
scientific, 315
of physical education adapted to period, 13
application, 15
equipment and staff and, relation, 281
sources and data, 3
validity of, 9
of relative values, 12
profession and, 8
- Prisons, 209
- Problems shaping physical education, analysis of, 191
- Profession, physical education as, 5
principles and, 8
- Professional ethics, 306
training for teachers of physical education, 305
- Professor of physical education, 303
- Proficiency and participation, 205
- Program of physical education, 231
aquatics, 234
athletics, 234
camp activities, 238
dance, 235
drill, 239
equitation, 234
fundamental skills, 236
gymnastics, 238
individual gymnastics, 232
play and games, 234
self-testing, combat and self-defense activities, 236
- Programs, social ideals and, 204
- Progression, logical, 323
psychological, 327
- Promotion of learning, rewards and punishment in, 321
- Protozoa, 57
- Psychic factors in experience, 164
- Psychological foundations of man, 91
progression, 327
- Psychologists, objective, 103
- Psychology and instincts, 92
Gestalt, 100
modern, physical education and, 95
practical suggestions from, 103
- Punishments and rewards in promotion of learning, 321
- Puritan tradition, 215
- Pyknics, 71
- Pythia, 153
- QUADRUPED position, 60, 61
- Qualitative adjustment, principle of, in fundamental skills, 270
- Quetelet, 346
index, 355
- RACE, changes in, 38
- Racial endurance in women in child-bearing, 37
physical activities, analysis of, 62
- Rainfall and temperature changes, local and foreign, 297
- Rathbone, J. L., 37, 277
- Raubenheimer and Nichols, 124
- Raup, R. B., 113
- Reciprocal innervation, 78
- Recreation, federal government and, 221, 233
park, 233
- Recreational life of child, 45
age and sex preferences, 63, 64, 65
time-study, 61
type activity, 63, 64, 65
- Reeves, C. E., 374
- Reflex, conditioned, 106
- Reformatories, 209
- Reisner, E. H., 126, 127, 170

- Rejection, for military service, causes of, 28
 in urban and rural groups, causes of, 42, 43
 comparison of, 41
 physical, alien and native, comparison, 196
- Relative values, principle of, 12
- Relaxation, a normal condition, 78
- Reliability of experience of others as guide, 161
 of tests in physical education, 350
- Reservation, government, for recreational use, 283
- Resistive exercises, 78
- Resourcefulness, 252
- Respiration, 75
 breathing exercises in, 77
 cell activity in, 77
 respiratory mechanism, 75
- Response-command exercises, 251
- Rewards and punishments in promotion of learning, 321
- Rhythm in American life, 207
 objectives of dance, 265, 267
- Rifenberck, R. H., 355
- Riggadoon, 152
- Riggs, A. F., 227
- Risk, ever-present, 14
- Robinson, J. H., 7, 189
- Robusticity, Pignet's formula for, 355
- Rodgers, E., 105
- Rogers, E., 322
- Rogers, F. R., 145, 354
- Rogers, J. F., 270
- Rogers, J. L., 32
- Rooms, dressing, for girls, 294
 for high schools, 293
 game, for high schools, 293
 play, in elementary schools, 289
- Roosevelt, T., 71
- Ross, E. A., 137, 138
- Rousseau, 151, 174
- Rural groups, defects in, 40
 rejections for military service in, causes of, 42, 43
 comparison to urban groups, 41
- Running activities, preference for, 63
 objectives of, 273
- Russell, B., 145
- SANDOW, 347
- Sargent, 274, 347, 348
- Sargent, D. L., 354
- Satisfaction, 98
- Saucier, W. A., 18
- Scheinfeld, A., 32, 50
- Schneider, E. C., 354
- School child, defects in, per cent, 30
 significance, 29
 White House conference on, 29
- elementary, area of site, 283, 284
 equipment for, 287, 289
 gymnasium in, 289
 play rooms in, 289
 swimming pool in, 290
- high, area of site, 285
 equipment for, 290
 corrective gymnasium, 293
 dressing rooms, 293, 294
 examination room, 293
 game rooms, 293
 showers, 294
 swimming pool, 294
 gymnasium in, 290
- intermediate, area of site, 283, 284
 playground, area of, 284
 room stoop, 67
 site, area of, 282
 considerations determining standards, 283
 for elementary school, 283, 284
 for high school, 285
 for intermediate school, 283
- Schools and the federal government, 222
 of psychology, 254
 of training based on tradition, 10
- Schuman, F. L., 187
- Science and art in teaching, 315
- Scotland, sword dances of, 152
- Scott, H. A., 234
- Scott, N. G., 243
- Seaver, 347
- Sedentarianism, 198

- Seham, M., 59
 Selective service acts, 26
 Self-consciousness, 206
 Self-discipline, 253
 Self-expression and self-realization, 206
 Self-realization and self-expression, 206
 Self-testing, 251
 activities, objectives in, 268
 combat and self defense activities in
 program of physical education, 236
 Sense of justice, 138, 139
 and the social order, 138
 Sequidilla, 153
 Sex differences in male and female, 68
 Shape and size of heart, 73
 Sharman, J. R., 213, 341
 Shaw, C. R. and McKay, H. D., 227
 Shearman, M., 178
 Sheffield, N. C. and Sheffield, L., 286
 Shepard, W. P. and Diehl, H. S., 33, 36,
 41, 60
 Sherman, H. C., 39
 Sherrington, 365
 Sherrington, C. S., 78, 87, 272, 365
 Shifts and growth in population, 193
 Shortages of modern industrial life, 21,
 23
 Showers in high school gymnasium, 204
 Shuttleworth, F. K., 87
 Sickness, 208
 Sisler, 366
 Site, school, area of, 282
 Situation and response in the learning
 process, 99
 Size and shape of heart, 73
 of heart at different ages, 74
 Skeletal defects of children, 80
 Skeleton, human, variations in, at dif-
 ferent age levels, 66
 infant and adult, differences between,
 65
 Skerlj, 69
 Skills, fundamental, in program of phys-
 ical education, 236
 objectives in, 269 See also *Obec-*
 tives in fundamental skills
 motor, overlearning of, 109
 Skinner, C. E., 101
 Smith, H. N. and Coops, H. L., 341
 Snedden and Fauver, 365
 Snow, 31
 Sociability, 197
 Social and biological inheritance, com-
 bined, 147
 backgrounds, opportunities to utilize,
 151
 control and order, 136
 delinquency, physical education and,
 208
 direction of physical education, 11
 forces and physical education, 208
 antagonistic to physical education,
 213
 development of, different traits and
 ideas from, 149
 ideals and programs, 204
 inheritance in dance, 152
 in physical education, 151
 in sports and games, 153
 institutions, delinquent, 212
 learnings of man, 118
 objectives of dance, 266
 order and sense of justice, 138
 Socialization in concomitant learnings,
 336
 Socially sound, 252
 Society, industrialization of, physical
 education and, 199
 Sociological foundations of man, 117
 Socrates, 150
 Solution of the biped problem, 62
 Space requirement for games, 286, 288
 for sports, 286
 Specialists, educational function, 300
 Spectatoritis, 184
 Spence and Watson, 99
 Spencer, 364
 Spinal defects of infants, 80
 Spine lengths, 67
 of child and adult, differences in, 67
 Spinoza, 245
 Sports in program of physical educa-
 tion, 234
 objectives in, 263
 social inheritance in, 153
 space requirement, 286

- Staff in physical education, 299
 changed conditions modifying, 299
 objectives in, 281
 principles and program and, relation, 281
- Staley, S. C., 243
- Standards, economic, interpretation of, 202
 for judging physical education practice, 301
 evaluation of, 370
- Static views of man, 13
- Statistical approach to tests in physical education, 348
- Stecker, W. A., 168, 238, 286
- Steiner, J. F., 227
- Stein's Edict of Emancipation, 169
- Stimulus and response concept, 100
- Storey, T. A., 32, 304
- Strains, 95
- Strayer, G. D. and Engelhardt, N. L., 285, 290, 311
- Struck, F. T., 341
- Struggle important, 146
- Students, college, defects in, kinds and significance, 32, 33, 36
 university, defects in, kinds and significance, 32, 33, 36
- Stunts on apparatus, objectives in, 263
- Swedish physical education, history of, 172
- Swimming, objectives in, 263, 264
 pool for high schools, 294
 in elementary schools, 290
- Swoboda, 272
- Sword dances of Scotland, 152
- Symonds, P. M., 333, 374
 and Chase, D. H., 110
- Systems of training based on tradition, 10
- TAWNEY, 189
- Teachers of physical education, professional training for, 305
- Teaching, methods and objectives, 316
 objectives of, 317
- Teaching, range of, 317
 science and art in, 315
- Technical learnings, 318
 method in, 320
- Temperature changes and rainfall, local and foreign, 297
- Tensions, 95
- Terman, L. M., 124
- Tests in physical education, 345
 anthropometric, 346
 backgrounds of movements, 346
 changing view, 345
 clinical approach, 348
 failure to use results, 351
 function of, 346
 incorrect use of valid instrument, 351
 objectivity of, 350
 reliability of, 350
 statistical approach, 348
 unsound interpretation of results, 351
 validity, 350
 weakness of, 352
- Thewlis, M. W., 50
- Things, tragedy of, 133
- Thorndike, E. L., 51, 89, 98, 99, 100, 103, 113, 123, 321, 322, 332, 333, 365
- Throwing, objectives of, 274
- Tilden, 366
- Todd, M. E., 62, 263
- Too little and too late, tragedy of, in physical education, 15
- Tradition, influence of, on man's activities, 54
 puritan, 215
- Tragedy of things, 133
- Training, professional, for teachers of physical education, 305
 systems based on tradition, 10
 transfer of, 104
- Traits and customs, experience in terms of, 165
 and ideas, development of, from social forces, 149
 inheritance of, 56
- Transfer of training, 104
- Trunk, muscles of, 73

- Truthfulness, 253
 Turnen, 168, 169
 Turnverein, 170
 Types, body, 71
- UMSTÄTTE, J. G., 341
 Undset, Sigrid, 25
 Unfit, preservation of, 31
 United States, population of (1790-1940), 194
 urban and rural (1900-1940), 197
 Unity and diversity of man, 91
 and modern philosophy, 125
 concept, 127
 application of, 127
 of individual, 210
 University students, defects in, kinds
 and significance, 32, 33, 36
 Urban groups, defects in, 40
 rejections for military service in,
 causes of, 42, 43
 comparison to rural groups,
 41
 Urges, 92, 93
- VALENTINE, P. E., 374
 Validity of principles, 9
 of tests in physical education, 350
 Values, relative, principle of, 12
 Van Hagen, W. and Neilson, N. P., 248
 View, Gestalt, 100
 Vingakersdans, 153
 Viscera, abdominal, muscles of, 73
 Vision defects in university and college
 students, 33
 Vitality, organic, developed by exercise,
 320
 von Stein, 169, 170
- WALKING, objectives of, 273
 Wanderlust clubs, 238
 War served by physical education, 219
 Watson and Spence, 98
 Watson, J. B., 56
 Wealth, work and morals, 128
 Wehrsport, 171
 Weight-thrust, 61
 Wells, H. G., 19, 63, 397
 White House conference on child health
 and protection, 29
 Whole method, in learning process,
 103
 Wilburforce, 177
 Williams, J. F., 87, 125, 126, 187, 363
 Women and children in industry, 200
 college, height of, by years, 34
 height and periodic disability, rela-
 tion of changes in fashion to, 35
 in child-bearing, racial endurance in,
 37
 Wood, 29, 36, 40
 Woods, R. L., 50
 Woodworth, R. S. and Ladd, G. T.,
 108
 Woody, T., 179, 189
 Work, joy of, 129
 wealth, and morals, 128
 World leadership of United States and
 physical education, 201
 Wren, C. G. and Harley, D. L., 222
- YOUNG, G. and Moser, H., 357
 Youth Hostel movement, 178
- ZACHARY, C. B., 341
 Zalman, 153
 Zuckerman, 143